

**Revolade 25mg, 50mg, Film Coated Tablets** : הנדון

התכשיר שבנדון רשום בישראל להתוויות הבאות:

Revolade is indicated for the treatment of patients aged 6 year and above with primary immune thrombocytopenia (ITP) lasting 6 months or longer from diagnosis and who are refractory to other treatments (e.g. corticosteroids, immunoglobulins)

Revolade is indicated for the treatment of adult patients with severe aplastic anaemia who have had an insufficient response to immunosuppressive therapy.

Revolade is indicated for the treatment of thrombocytopenia in adult patients with chronic hepatitis C to allow the initiation and maintenance of interferon-based therapy.

Revolade is indicated in combination with standard immunosuppressive therapy for the first-line treatment of adult and pediatric patients 6 years and older with severe aplastic anemia.

ELTROMBOPAG ( AS OLAMINE ) 25mg  
ELTROMBOPAG ( AS OLAMINE ) 50mg

המרכיב הפעיל:

**ברצוננו להודיעכם על עידכון העלון לרופא ולצרכן של התכשירים בנדון. לתשומת לבכם, העלונים כוללים תוספת התוויה ושינוי בהתוויה קיימת.**

עקב שינויים רבים בעלונים, מצורפים העלונים במלואם עם סימון השינויים.

(מידע שהתווסף מודגש בקו תחתון, מידע שנמחק – מסומן בקו-חוצה, החמרות-מודגשות בצהוב)

העלונים נשלחו לפרסום במאגר התרופות שבאתר משרד הבריאות, וניתן לקבלם מודפסים על-ידי פניה לבעל הרישום

בברכה,

עדי אלוש  
רוקחת ממונה

עלון זה נבדק ואושר על ידי משרד הבריאות בתאריך דצמבר 2017

## עלון לצרכן לפי תקנות הרוקחים (תכשירים) התשמ"ו - 1986

התרופה משווקת על פי מרשם רופא בלבד

רבוליד 25 מ"ג טבליות מצופות  
רבוליד 50 מ"ג טבליות מצופות

כל טבליה מצופה מכילה:

אלטרומבופאג (כ-אולאמין) 25 מ"ג או 50 מ"ג.  
Eltrombopag (as Olamine) 25mg or 50mg  
חומרים בלתי פעילים: ראה סעיף 6 מידע נוסף".

**קרא בעיון את העלון עד סופו בטרם תשתמש בתרופה.** עלון זה מכיל מידע תמציתי על התרופה. אם יש לך שאלות נוספות, פנה אל הרופא או אל הרוקח.

תרופה זו נרשמה עבורך. אל תעביר אותה לאחרים.  
היא עלולה להזיק להם אפילו אם נראה לך כי מצבם הרפואי דומה.

### 1. למה מיועדת התרופה?

רבוליד מכילה אלטרומבופאג, אשר שייך לקבוצת תרופות הקרויות אגוניסטיית לקולטן לתרומבופואטין (thrombopoietin receptor agonist). הוא משמש כדי לעזור להעלות את מספר הטסיות בדם שלך. טסיות הדם הן תאי דם המסייעים להפחית או למנוע דימום.

— לטיפול במטופלים מגיל 6 ומעלה עם הפרעת קרישה כרונית מסוג ארגמנט תרומבוציטופניה ת אידיאטית-תיסונית-ראשונית (ITP) שנמשכת 6 חודשים או יותר מן האבחון, לאחר טיפול קודם, לצורך העלאת ספירת טסיות והפחתת או מניעת דימום אשר עמידה לטיפולים אחרים (כגון קורטיקוסטרואידים, אימונוגלובולינים).

ITP נגרמת בשל ספירת טסיות דם נמוכה (תרומבוציטופניה). אנשים עם ITP הנם בעלי סיכון מוגבר לדימום. הסימפטומים של חולים עם ITP עשויים לכלול פטחיה (כתמים אדומים עגולים שטוחים מתחת לעור), חבורות, דימום מהאף, דימום בחניכיים ולא ניתן לשלוט בדימום אם הם נחתכים או נפצעים.

• לטיפול בתרומבוציטופניה-בתרומבוציטופניה (ספירה נמוכה של טסיות בדם) בחולים מבוגרים עם דלקת כבד נגיפית כרונית מסוג C (HCV) בכדי לאפשר התחלה והמשך טיפול המבוסס על אינטרפרון.

• לטיפול באנמיה אפלסטית חמורה (SAA) בשילוב עם תרופות אחרות לטיפול ב-SAA, כקו ראשון למבוגרים וילדים מגיל 6 ומעלה.

- לטיפול במטופלים מבוגרים עם אנמיה אפלסטית חמורה (SAA) שעבורם טיפול בתרופה מדכאת מערכת חיסון לא הניב תגובה מספקת.

## קבוצה תרפויטית

רבוליד שייכת לקבוצת תרופות למניעת דימומים, תרופות-סיסטמיות המוסטטיות אחרות. הקרויות אגוניסטים לקולטן לתרומבופואטין (thrombopoietin receptor agonists).

## 4.2. לפני השימוש בתרופה

אין להשתמש בתרופה אם:

- אתה רגיש (אלרגי) לחומר הפעיל או לכל אחד מהמרכיבים הנוספים אשר מכילה התרופה (מפורטים בסעיף 6, "מידע נוסף").

בדוק עם הרופא שלך אם אתה חושב שזה חל עליך.

## אזהרות מיוחדות הנוגעות לשימוש בתרופה

### ! לפני הטיפול ברבוליד ספר לרופא אם:

- **אם יש לך בעיות בכבד.** אנשים להם ספירת טסיות נמוכה בנוסף למחלת כבד כרונית מתקדמת הינם בסיכון מוגבר לתופעות לוואי כולל נזק כבדי מסכן חיים וקרישי דם.
- אם הרופא שלך סבור שהיתרונות בנטילת רבוליד עולים על הסיכונים, אתה תהיה תחת מעקב צמוד במהלך הטיפול.
- **אם אתה בסיכון להיווצרות קרישי דם** בורידים או בעורקים שלך, או שידוע לך שקרישי דם שכיחים במשפחה שלך.

אתה עשוי להיות בסיכון מוגבר להיווצרות קרישי דם:

- ככל שאתה מתבגר
- אם נאלצת להיות מרותק למיטה למשך זמן ממושך
- אם יש לך סרטן
- אם את נוטלת גלולות למניעת הריון או מטופלת בתחליף הורמונלי
- אם עברת לאחרונה ניתוח או אם נפצעת
- אם אתה בעל משקל עודף רב (השמנת יתר)
- אם אתה מעשן
- אם יש לך מחלת כבד כרונית מתקדמת
- אם אחד מאלה חל עליך, **ספר לרופא שלך לפני תחילת הטיפול.** אל תיקח רבוליד אלא אם כן הרופא שלך סבור כי היתרונות הצפויים עולים על הסיכון לקרישי דם.
- **אם יש לך קטרקט** (עדשת העין הופכת עכורה).
- **אם יש לך בעיה אחרת הקשורה בדם**, כגון תסמונת מיאלודיספלסטית (MDS – myelodysplastic syndrome). הרופא שלך יבצע בדיקות כדי לוודא שאינך סובל מבעית דם זו, לפני שתתחיל ליטול רבוליד. אם יש לך תסמונת מיאלודיספלסטית והינך נוטל רבוליד ה-תסמונת המיאלודיספלסטית שלך עלולה להחמיר.
- ספר לרופא שלך אם אחד מאלה חל עליך.

### ! בדיקות עיניים

הרופא שלך ימליץ שתעבור בדיקה לקטרקט. אם אינך עובר בדיקות עיניים שגרתיות, הרופא שלך ישלח אותך לבדיקות תקופתיות. יתכן גם שתיבדק לקיום דימום בתוך או מסביב לרשתית (שכבת התאים הרגישה לאור בחלק האחורי של העין).

## **! בדיקות קבועות**

לפני שאתה מתחיל לקחת רבולייד הרופא שלך יבצע בדיקות דם כדי לבדוק את תאי הדם שלך, כולל טסיות. בדיקות אלה יחזרו על עצמן במרווחי זמן קצובים במהלך נטילת התרופה.

## **! בדיקות דם לתפקוד כבד**

רבולייד יכולה לגרום לתוצאות בבדיקות דם העשויות להעיד על נזק כבדי - עלייה של מספר אנזימי כבד, במיוחד בילירובין ואלאנין/אספרטט טראנסאמינאזות. אם אתה מקבל טיפולים המבוססים על אינטרפרון יחד עם רבולייד לטיפול בספירה נמוכה של טסיות הנובעת מדלקת כבד מסוג C, בעיות כבד מסוימות עלולות להחמיר.

אתה תעבור בדיקות דם כדי לבדוק את תפקוד הכבד שלך לפני שתתחיל ליטול רבולייד וכן במרווחי זמן קצובים במהלך נטילתה. יתכן שתצטרך להפסיק ליטול רבולייד אם כמות החומרים הללו תגדל יתר על המידה, או אם יופיעו אצלך סימנים אחרים של נזק לכבד.

**- קרא את המידע המופיע תחת 'בעיות בכבד' בסעיף 4 של עלון זה.**

## **! בדיקות דם לספירת טסיות**

אם אתה מפסיק ליטול רבולייד, ספירת טסיות הדם שלך צפויה להיות שוב נמוכה בתוך מספר ימים. ספירת הטסיות תנטר והרופא שלך ידון איתך באמצעי הזהירות המתאימים.

ספירת טסיות דם גבוהה מאוד עלולה להגביר את הסיכון לקרישת דם. עם זאת, קרישי דם עלולים להיווצר גם כאשר ספירת הטסיות הינה רגילה ואף נמוכה. הרופא שלך יתאים לך את המינון של רבולייד כדי לוודא שספירת הטסיות שלך לא תעלה יתר על המידה.

**! פנה מיד לקבלת עזרה רפואית אם יש לך כל אחד מהסימנים הבאים לקריש דם:**

- נפיחות, כאב או רגישות ברגל אחת
- קוצר נשימה פתאומי במיוחד כשמתלווה לו כאב חד בחזה או נשימה מהירה
- כאב בטן (קיבה), בטן מוגדלת, דם בצואה שלך

## **! בדיקות של מח העצם**

באנשים שלהם יש להם בעיות במח העצם, תרופות כמו רבולייד עלולות להחמירן. סימנים לשינויים במח העצם יכולים להופיע כתוצאות חריגות בבדיקות הדם שלך. יתכן שהרופא שלך יערוך גם בדיקות הבוחנות באופן ישיר את מח העצם שלך במהלך הטיפול ברבולייד.

## **! בדיקות לדימום במערכת העיכול**

אם אתה לוקח טיפולים מבוססי אינטרפרון יחד עם רבולייד, אתה תהיה תחת מעקב אחרי כל סימן של דימום בבטן או במעי -לאחר הפסקת נטילת רבולייד.

## **! ניטור לב**

יתכן והרופא שלך יחשוב שהכרחי לפקח על הלב שלך במהלך הטיפול ברבולייד ויבצע בדיקת א.ק.ג.

## **! אנשים מבוגרים (65 שנים ומעלה)**

**ישנם נתונים מוגבלים על השימוש ברבולייד בחולים בני 65 ומעלה. יש להיזהר בעת שימוש ברבולייד אם אתה בן 65 ומעלה.**

## **! ילדים ומתבגרים**

- רבולייד **טבליט** אינה מיועדת לילדים מתחת לגיל 6 עם ITP או עם אנמיה אפלטית חמורה (SAA) בשילוב עם תרופות אחרות לטיפול ב-SAA, כקו ראשון:

כמו כן:

רבולייד

- אינה מיועדת לילדים ומתבגרים מתחת לגיל 18 עם ספירת טסיות נמוכה בשל דלקת כבד נגיפית כרונית מסוג C או באנמיה אפלסטית חמורה (SAA) שעבורם טיפול בתרופה מדכאת מערכת חיסון לא הניב תגובה מספקת.
- אנמיה אפלסטית חמורה.

### אינטראקציות/תגובות בין תרופתיות

אם אתה לוקח, או אם לקחת לאחרונה, תרופות אחרות כולל תרופות ללא מרשם, ותוספי תזונה **ויטמינים**, ספר על כך לרופא או לרוקח. במיוחד אם אתה לוקח:

- תרופות נוגדות חומציות לטיפול בהפרעות עיכול, צרבת או כיבים בקיבה (ראה גם סעיף 3- "כיצד תשתמש בתרופה?")
- תרופות הנקראות סטטינים, להורדת כולסטרול
- תרופות מסוימות לטיפול בזיהום של HIV, כגון לופינביר ו/או ריטונביר
- ציקלוספורין המשמשת בהקשר של השתלות או מחלות אימוניות
- מינרלים כגון ברזל, סידן, מגנזיום, אלומיניום, סלניום ואבץ שיכולים להימצא בתוספי ויטמינים ומינרלים (ראה גם סעיף 3 "כיצד תשתמש בתרופה?")
- תרופות כגון מתוטרקסט וטופוטקאן, לטיפול בסרטן
- פלובוקסאמין
- ריפאמפיצין

**דווח לרופא שלך** אם אתה לוקח תרופה כלשהי מבין אלה. חלק מהן אין לקחת ביחד עם רבוליד או שיתכן ויהיה צורך להתאים את המינון, או שתצטרך לשנות את הזמנים שבהם אתה לוקח אותן. הרופא שלך יבחן את התרופות שאתה לוקח, ויציע תחליף מתאים אם יהיה בכך צורך.

אם אתה לוקח גם תרופות למניעת קרישי דם קיים סיכון מוגבר לדימומים. הרופא שלך ידון איתך בזה.

אם אתה לוקח **קורטיקוסטרואידים, דנזול** ו/או **אזתיופרין**, יתכן שתצטרך לקחת מינון נמוך יותר או להפסיק לקחת אותם במהלך -נטילת רבוליד.

### שימוש בתרופה - מזון ושתייה

אל תיקח רבוליד עם מאכלי או משקאות חלב היות והסידן במוצרי החלב משפיע על ספיגת התרופה. למידע נוסף, ראה סעיף 3, "כיצד תשתמש בתרופה?".

### הריון והנקה

**אל תשתמשי ברבוליד אם את בהריון** אלא אם הרופא שלך המליץ על כך באופן מפורש. ההשפעה של רבוליד במהלך הריון אינה ידועה.

- **ספרי לרופא שלך אם את בהריון**, חושבת שיתכן ואת בהריון או מתכננת להרות.
- **השתמשי באמצעי מניעה אמין** בזמן שאת נוטלת רבוליד, על מנת למנוע הריון.
- **אם נכנסת להריון בזמן הטיפול** ברבוליד, ספרי לרופא שלך.

אל תניקי בזמן שאת לוקחת רבוליד. לא ידוע אם רבוליד עוברת לחלב אם.

- אם הינך מניקה או מתכננת להניק, ספרי לרופא **שלך**.

## נהיגה ושימוש במכונות

רבולייד יכולה לגרום לך לסחרחורת ולתופעות לוואי אחרות שעלולות לעשות אותך פחות עירני.

- אל תנהג או תשתמש במכונות אלא אם אתה בטוח שאינך מושפע.

- כאשר לילדים יש להזהירם מרכיבה על אופניים או ממשחקים בקרבת הכביש וכדומה.

### 2.3. כיצד תשתמש בתרופה?

תמיד יש להשתמש בתכשיר תמיד לפי בהתאם להוראות הרופא.

עליך לבדוק עם הרופא או הרוקח אם אינך בטוח בנוגע למינון ואופן הטיפול בתכשיר. המינון ואופן הטיפול יקבעו על-ידי הרופא בלבד.

אל תשנה את המנה או את לוח הזמנים לנטילת רבולייד אלא אם הרופא או הרוקח שלך אמרו לך לשנות זאת.

בתקופה בה אתה נוטל רבולייד תהיה תחת מעקב טיפול של רופא עם ניסיון המתמחה בטיפול במצבך.

### מינון המקובל בדרך כלל הוא:

#### טיפול ב-ITP

**מבוגרים וילדים (6 עד 17)** - המינון ההתחלתי המקובל לטיפול ב-מטופלים עם ITP + SAA הוא טבליה אחת של 50 מ"ג רבולייד ביום. אם המוצא שלך הוא ממזרח אסיה (סיני, יפני, טיוואני, תאילנדי או קוריאני) **ייתכן** ותצטרך להתחיל במינון נמוך יותר של 25 מ"ג.

#### טיפול בדלקת כבד נגיפית מסוג C

**מבוגרים** - המינון ההתחלתי המקובל לטיפול ב-לאנשים עם דלקת כבד נגיפית מסוג C הוא טבליה אחת של 25 מ"ג רבולייד ביום. אם המוצא שלך הוא ממזרח אסיה (סיני, יפני, טיוואני, תאילנדי או קוריאני) עליך להתחיל באותו המינון של 25 מ"ג.

#### טיפול ב-SAA כקו ראשון

המינון ההתחלתי הרגיל של רבולייד לחולי SAA כאשר הוא ניתן בשילוב עם טיפול אימונוסופרסיבי סטנדרטי כטיפול הראשון עבור SAA הוא:

**מבוגרים ומתבגרים (12 ומעלה)** 150 מ"ג פעם ביום במשך 6 חודשים. אם המוצא שלך הוא ממזרח אסיה (סיני, יפני, טיוואני, תאילנדי או קוריאני) או במקרה של נזק כבד אתה צריך לקבל 75 מ"ג פעם ביום במשך 6 חודשים.

**ילדים בגילאי 6-11 שנים** - 75 מ"ג פעם ביום למשך 6 חודשים. ילדים ממוצא מזרח אסייתי (סיני, יפני, טיוואני, תאילנדי או קוריאני) או במקרה של נזק כבד צריכים לקבל 75 מ"ג פעם ביומיים למשך 6 חודשים.

#### טיפול ב-SAA עמיד

**מבוגרים** - המינון ההתחלתי המקובל לטיפול ב-SAA הוא טבליה אחת של 50 מ"ג רבולייד ביום. אם המוצא שלך הוא מזרח אסייתי (סיני, יפני, טיוואני, תאילנדי או קוריאני) תצטרך להתחיל במינון נמוך יותר של 25 מ"ג.

#### טיפול ב-SAA

**מבוגרים - המינון ההתחלתי המקובל לטיפול ב-SAA הוא טבליה אחת של 50 מ"ג רבולליד ביום. אם המוצא שלך הוא מזרח אסיאתי (סיני, יפני, טיוואני, תאילנדי או קוריאני) תצטרך להתחיל במינון נמוך יותר של 25 מ"ג.**

רבולליד עשויה להשפיע תוך שבוע עד שבועיים. בהתאם לתגובה שלך לרבולליד יתכן שהרופא שלך ימליץ על שינוי במינון היומי שלך.

**אין לעבור על המנה המומלצת.**

### צורת הנטילה

יש לבלוע את הטבליה בשלמותה, עם מעט מים.

אין מידע לגבי כתישה/חצייה/לעיסה.

**מתי לקחת את התרופה**

### וודא כי-

- במהלך ארבע שעות לפני נטילת רבולליד
- וכמו כן במהלך שעתיים לאחר נטילת רבולליד

**אינך צורך אין לצרוך את אחד מהבאים:**

- מאכלי חלב כגון גבינה, חמאה, יוגורט או גלידה
- חלב או מילקשייק, משקאות המכילים חלב, יוגורט או שמנת
- נוגדי חומציות- תרופות נגד הפרעות עיכול וצרבת
- סוגים מסוימים של תוספי מינרלים וויטמינים, הכוללים ברזל, סידן, מגנזיום, אלומיניום, סלניום ואבץ

אם לא תקפיד על הנחיה זו, התרופה לא תיספג כראוי בגוף שלך.



**לייעוץ נוסף לגבי מאכלים ומשקאות מתאימים, שוחח עם הרופא שלך.**

**אם נטלת לקחה בטעות מינון גבוה יותר**

אם נטלת לקחה מנת יתר או אם בטעות בלע ילד מן התרופה, פנה מיד לרופא או לחדר מיון של בית חולים והבא את אריזת התרופה איתך.

אתה תיבדק לאיתור סימנים או תסמינים כלשהם של תופעות לוואי וינתן לך מיד טיפול מתאים.

אם שכחת ל**יטולקח** את התרופה קח את המנה הבאה שלך בזמן המיועד. אל תיקח יותר ממנה אחת של רבולייד ביום אחד.

[יש להתמיד בטיפול כפי שהומלץ על-ידי הרופא.](#)

אם אתה מפסיק את נטילת התרופה אל תפסיק לקחת רבולייד מבלי לשוחח עם הרופא שלך. אם הרופא מייעץ לך להפסיק את הטיפול, ספירת הטסיות שלך תיבדק לאחר מכן בכל שבוע במשך ארבעה שבועות. **ראה** מידע נוסף תחת "**דימומים או חבורות לאחר הפסקת הטיפול**" בסעיף 4.

[יש להתמיד בטיפול כפי שהומלץ על-ידי הרופא.](#)

אין ל**יטולקח** תרופות בחושך! בדוק התווית והמנה בכל פעם **שאתה-שהינך נוטל לקח** תרופה. הרכב משקפיים אם **אתה-הינך** זקוק להם.

אם יש לך שאלות נוספות בנוגע לשימוש בתרופה, היוועץ ברופא או ברוקח.

#### 3.4. תופעות לוואי

כמו בכל תרופה, השימוש ברבולייד עלול לגרום לתופעות לוואי בחלק מהמשתמשים. אל תיבהל למקרא רשימת תופעות הלוואי. יתכן ולא תסבול מאף אחת מהן.

#### תסמינים שיש לשים לב אליהם: פנה לרופא

אנשים הנוטלים רבולייד לטיפול ב-ITP או לספירת טסיות נמוכה עקב **דלקת כבד נגיפית** (הפטיטיס) מסוג C יכולים לפתח סימנים של תופעות לוואי שעלולות להיות חמורות. חשוב להודיע לרופא אם אתה מפתח תסמינים אלו.

#### סיכון מוגבר להיווצרות קרישי דם

**יתכן** לאלנשים מסוימים **יתכן** יקיים סיכון מוגבר לקרישי דם ותרופות כמו רבולייד עלולות להחמיר את הבעיה הזאת. החסימה הפתאומית של כלי דם על-ידי קרישי דם היא תופעת לוואי לא שכיחה והיא יכולה להופיע אצל עד 1 מכל 100 אנשים.

**פנה מיידית לקבלת עזרה רפואית אם אתה מפתח סימנים ותסמינים של קרישי דם, כגון:**

- נפיחות, כאב, תחושת חום, אדמומיות או רגישות ברגל אחת
- **קוצר נשימה פתאומי**, במיוחד יחד עם כאב חד בחזה או נשימה מהירה
- כאב בטן (קביה), בטן מוגדלת, דם בצואה שלך

#### בעיות בכבד

רבולייד יכולה לגרום לשינויים אשר מופיעים בבדיקות דם ועלולים להיות סימנים לנזק לכבד. בעיות כבד (עלייה באנזימים המופיעה בבדיקות דם) הן שכיחות **יכולות-ועשויות להשפיע** להופיע **אצל-על** עד 1 מכל 10 אנשים. בעיות כבד אחרות (זרימה לא תקינה של מיץ המרה) אינן שכיחות והן **יכולות-להופיע-עשויות להשפיע על-אצל** עד 1 מכל 100 אנשים.

**ספר מיד לרופא-שלך** אם יש לך כל אחד מהסימנים הבאים של בעיות בכבד:

- **הצהבת** העור או לובן העיניים (צהבת)
- **שתן כהה** מהרגיל

[ספר מיד לרופא שלך.](#)

דימומים או חבורות לאחר הפסקת הטיפול



בתוך שבועיים מהפסקת הטיפול ברבולייד, ספירת טסיות הדם שלך בדרך כלל תרד חזרה לרמה שהייתה לפני שהתחלת ליטול רבולייד. ספירת הטסיות הנמוכה יכולה להגביר את הסיכון להופעת דימומים או חבורות. הרופא שלך יבדוק את ספירת הטסיות שלך במשך ארבעה שבועות לפחות לאחר שתפסיק ליטול רבולייד.

**ספר לרופא שלך** אם לאחר הפסקת הטיפול ברבולייד יש לך דימומים או חבורות.

לאנשים מסוימים יש **דימומים במערכת העיכול** לאחר שהם מפסיקים לקחת פגאינטרפרון, ריבאוירין ורבולייד. התסמינים כוללים:

- צואה שחורה כזפת (יציאות בגוון שונה מהרגיל הן תופעת לוואי לא שכיחה **שינולה** להופיע **ששועיה להשפיע על אצל-עד** - 1 מכל 100 אנשים)
  - דם בצואה שלך
  - הקאת דם או חומר שנראה כמו גרגרי קפה
- ספר מיידית לרופא שלך** אם יש לך אחד מתסמינים אלו.

**תופעות הלוואי- הבאות דווחו כקשורות לטיפול ברבולייד אפשריות- נוספות באצל מטופלים מבוגרים הסובלים מ-ארגמנת תרומבוציטופנית אידיופתית (ITP):**

#### **תופעות לוואי שכיחות מאוד**

אלה עשויות להופיע **להשפיע ביותר על יותר מ-עד 1 מכל מתוך 10 אנשים:**

- **הצטננות**
- **בחילה**
- **שלשול**
- **שיעול**
- **זיהום באף, בסינוסים, בגרון ובדרכי נשימה עליונות, הצטננות (זיהום בדרכי נשימה עליונות)**

#### **תופעות לוואי שכיחות מאוד שיכולות להופיע בבדיקות דם:**

- **עלייה באנזימי כבד (אלאנין אמינוטראנספראז (ALT))**

#### **תופעות לוואי שכיחות**

אלה יכולות **להשפיע בעל עד 1 מתוך 10 אנשים:**

- **כאב שרירים, התכווצויות שרירים**
- **כאב גב**
- **כאב בעצמות**
- **דימום וסתי כבד**
- **כאב גרון ואי-נוחות בעת בליעה**
- **בעיות בעין כולל- עין יבשה, כאב בעין וראייה מטושטשת**
- **הקאה**
- **שפעת**
- **הרפס בפה**
- **דלקת ריאות**
- **גירוי ודלקת (נפיחות) של הסינוסים**
- **דלקת (נפיחות) וזיהום של השקדים, זיהום של הריאות, הסינוסים, השקדים, האף והגרון**
- **דלקת ברקמת החניכיים**
- **אובדן תיאבון**
- **תחושה של עקצוץ, דוקרנות או קהות, המכונה "סיכות ומחטים"**
- **תחושת נמנם**
- **כאב אוזניים**
- **כאב, נפיחות ורגישות באחת הרגליים (בדרך כלל בחלק האחורי שבין הברך לקרסול) עם עור חם באזור הנגוע (סימנים של קריש דם בוריד עמוק)**
- **נפיחות מקומית מלאה בדם כתוצאה מפגיעה בכלי דם (המטומה)**

- בעיות בפה כולל כאב בפה, לשון רגישה, דימום בחניכיים, כיבים בפה
- חלת
- כאב שיניים
- כאב ורגישות בבטן
- בעיות בכבד
- שינויים בעור, כולל הזעה מוגברת, פריחה גבשושית מגרדת, נקודות אדומות, שינויים במראה העור
- נשירת שיער
- שתן עם מראה בעל קצף, מקציף או מראה מבעבע של השתן (סימנים לחלבון בשתן)
- תחושה כללית לא טובה, חום גבוה, תחושת חום
- כאב בחזה
- בעיות שינה, דיכאון
- מיגרנה
- ראייה ירודה
- תחושת סחרור (ורטיגו)
- גזים

- עכירות של עדשת העין (קטרקט)
- עיניים יבשות
- נשירה או הדלדלות חריגה של השיער
- פריחה בעור
- גירוד
- כאב שרירים, התכווצויות שרירים
- כאב גב
- כאב בעצמות
- עקצוצים או חוסר תחושה בידיים או בכפות הרגליים
- דימום וסתי כבד
- כיבים בפה

תופעות לוואי שכיחות שיכולות להופיע בבדיקות דם:

- ירידה במספר תאי הדם האדומים (אנמיה)
- ירידה במספר הטסיות (תרומבוציטופניה)
- ירידה במספר תאי הדם הלבנים
- ירידה ברמות ההמוגלובין
- עלייה במספר האאוזינופילים
- עליה במספר תאי הדם הלבנים (לויקוציטוזיס)
- עליה ברמות חומצה אורית
- ירידה ברמות אשלגן
- עלייה ברמות קריאטינין
- עלייה ברמות אלקליון פוספטז
- עלייה באנזימי כבד (אספרטט אמינוטראנספראז (AST))
- עלייה באנזימי כבד
- עלייה בבילירובין (חומר המיוצר על-ידי הכבד)
- עלייה ברמות גבוהות של חלבונים מסוימים-

#### תופעות לוואי שאינן שכיחות

אלה עשויות להופיע להשפיע ב- על עד 1 מכל-מתוך 100 אנשים:

- הפרעה באספקת דם לחלק מהלב
- קוצר נשימה פתאומי, במיוחד כאשר נלווה לו כאב חד בחזה ו/או נשימה מהירה, אשר יכולים להיות סימנים של קריש דם בריאות (ראה "סיכון מוגבר להיווצרות קרישי דם" בסעיף 4 לעיל)
- אובדן תפקוד של חלק מן הריאה כתוצאה מחסימה בעורק הריאה

- **בעיות בכבד**, כולל הצהבה של העיניים והעור (ראה "**בעיות בכבד**" בסעיף 4 לעיל)

- **פגיעה בכבד כתוצאה מתרופות**

- דפיקות לב מואצות, דופק לא סדיר, הכחלה של העור

- הפרעות בקצב הלב (הארכת QT)

- **קריש דם דלקת בוריד**

נפיחות מקומית מלאה בדם כתוצאה מפגיעה בכלי דם (המטומה)

כאב גרון ואי נוחות בעת בליעה, דלקת של הריאות, הסינוסים, השקדים, האף והגרון

שפעת

דלקת ריאות

- אובדן תיאבון

- מפרקים נפוחים וכואבים שנגרמים מחומצה אורית (שיגדון)

- **בעיות שינה**, דיכאון, אובדן עניין, שינויים במצב הרוח

- **תחושת נמנום**, מיגרנה, רעד, בעיות בשיווי משקל, בדיבור ובתפקוד העצבי, רעד

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בעיות בעין, כולל **עלייה בייצור דמעות**; **ע** ראייה מטושטשת ופחות חדה

- **עכירות של עדשת העין** (קטרקט), דימום של הרשתית

- **כאב אוזניים**, תחושת סחרור (רטוגו)

- בעיות באף, גרון וסינוסים, בעיות נשימה בזמן שינה

- בעיות במערכת העיכול; כולל **הקאה**, **גזים**, יציאות תכופות, **רעלת מזון**, **דם בצואה** כאב

ורגישות בבטן

- **סרטן של הרקטום** דימום רקטלי, **דם בצואה** שלר, נפיחות בבטן, **עצירות**

- בעיות בפה, כולל יובש או כאב בפה, לשון רגישה, דימום בחניכיים

- בעיות בפה, כולל: פה יבש או כואב, לשון רגישה, חניכיים מדממות

- שינויים בעור, כולל: הזעה מוגברת, פריחה גבשושית מגרדת, נקודות אדומות, שינויים

במראה

- כוויות מחשיפה לשמש

- אדמומיות או נפיחות מסביב לפצע

- דימום מסביב לקטטר (אם קיים) לתוך העור

- תחושה של גוף זר

- חולשת שרירים

- בעיות בכליה; כולל: דלקת בכליה, השתנה מוגברת בלילה, כשל כלייתי, **דלקת בדרכי**

**השתן**

- **תאים** בלבנים בשתן; **הופעת חלבון בשתן**

- תחושה כללית לא טובה, **חום גבוה**, תחושת חום, **כאב בחזה**

- זיעה קרה

- **דלקת ברקמת החניכיים**

- זיהום בעור

- **הרפס בפה**

- שינויים בעור כולל שינויים בצבע, **קילוף**, אדמומיות, **גוד** והזעה

- רגישות יתר היכולה לכלול תסמינים כגון פריחה, גירוד, סרפדת, קוצר נשימה או קושי

לנשום, ציפצוף בזמן הנשימה או שיעול, תחושת סיחרור, סחרחורת, שינויים ברמות

עירנות, לחץ דם נמוך, עם או ללא גרד כללי חלש, האדמת העור, התנפחות הפנים/גרון,

צביעת השפתיים, הלשון או העור בכחול (סימנים של תגובה אלרגית חמורה)

כאב ראש חמור שלעיתים קרובות מלווה בבחילה, הקאה ורגישות לאור (תסמינים של

מיגרנה)

**בדיקת עיניים חריגה**

**תופעות לוואי שאינן שכיחות שיכולות להופיע בבדיקות דם מעבדה:**

- **שינויים בצורת תאי הדם האדומים**

- **ירידה במספר תאי הדם האדומים (אנמיה)**, תאי הדם הלבנים וטסיות

- **עלייה במספר פירט הטסיות**

- ירידה ברמות סידן  
- ירידה במספר תאי הדם האדומים (אנמיה) שנגרמת כתוצאה מהרס רב מידי של תאי דם אדומים (אנמיה המוליטית)

- עליה במספר מיאלוציטים
- עליה בטווח הנויטרופילים
- עליה ברמות אוראה בדם
- עליה ברמות אלבומין בדם
- עליה ברמות חלבון כללי
- ירידה ברמות אלבומין בדם
- עליה בחומציות-PH של השתן
- עליה ברמות המוגלובין
- חלבון בשתן גבוה מהרמה הנורמלית כסימן לכך שהכלייה אינה עובדת טוב

עלייה במספר תאי הדם האדומים  
שינויים בהרכב הדם  
שינויים ברמות של חומצה אורית, סידן ואשלגן

תופעות לוואי הנוספות הבאות דווחו כקשורות לטיפול ברבוליד בילדים (מגיל 6 עד 17) הסובלים מ-ITP:  
אם תופעות לוואי אלו נעשות חמורות, דווח לרופא, רוקח או אחות.  
תופעות לוואי נוספות אפשריות אצל ילדים הסובלים מארגמנת תרומבוציטופנית אידיופתית (ITP)

#### תופעות לוואי שכיחות מאוד

אלה עשויות להופיע להשפיע ביותר על יותר מ- 1 מכל מתוך 10 ילדים:

- גרון כואב, נזלת, גודש באף והתעטשויות
- דלקת זיהום באף, בסינוסים, בגרון ובדרכי נשימה עליונות, הצטננות (זיהום בדרכי נשימה עליונות)
- שלשול
- כאב בטן
- שיעול
- חום גבוה

#### תופעות לוואי שכיחות

אלה עשויות להופיע להשפיע ב-על עד 1 מכל מתוך 10 ילדים:

- הפרעות בשינה
- כאבי בטן
- כאב שיניים
- שיעול
- כאב באף ובגרון
- אף מגרד, נזל או סתום
- גרון כואב, נזלת, גודש באף והתעטשויות
- בעיות בפה כולל יובש בפה, כאב בפה, לשון רגישה, דימום בחניכיים, כיבים בפה
- חום גבוה

אם הופיעה תופעת לוואי, אם אחת מתופעות הלוואי מחמירה או כאשר אתה סובל מתופעת לוואי שלא צוינה בעלון, עליך להתייעץ עם הרופא.

**תופעות הלוואי הבאות דווחו כקשורות לטיפול ברבוליד בשילוב עם פגאינטרפרון וריבאוירין במטופלים הסובלים מתופעות לוואי אפשריות נוספות אצל מטופלים עם דלקת כבד נגיפית כרונית מסוג C**

**תופעות לוואי שכיחות מאוד**

אלה עשויות להופיע להשפיע ביותר על יותר מ- 1 מכל מתוך 10 אנשים:

- כאב ראש
- ירידה בתיאבון
- ~~קשיי שינה (נדודי שינה)~~
- שיעול
- בחילה, שלשול
- כאב שרירים, חולשת שרירים
- גירוד;
- חוסר אנרגיה;
- חום גבוה
- ~~נשירת שיער חריגה,~~
- תחושת חולשה;
- מחלה דמוית שפעת;
- ~~נפיחות בידיים או בכפות הרגליים,~~
- צמרמורות.

**תופעות לוואי שכיחות מאוד שיכולות להופיע בבדיקות דם:**

- ירידה במספר תאי הדם האדומים (אנמיה).

**תופעות לוואי שכיחות**

אלה עשויות להופיע להשפיע על ב-עד 1 מכל מתוך 10 אנשים:

- זיהום במערכת השתן
- דלקת במעברי האף, גרון ופה, תסמינים דמויי שפעת, יובש בפה, פה כואב או מודלק, כאב שיניים
- ירידה במשקל
- הפרעות שינה, עייפות חריגה, ~~בלבול, דיכאון, חרדה, אי שקט~~
- סחרחורת, בעיות בקשב ובזיכרון. שינויים במצב הרוח
- עקצוצים או חוסר תחושה בידיים או בכפות הרגליים
- חום, כאב ראש
- ~~דלקת במוח~~
- בעיות בעין, כולל: עכירות של עדשת העין (קטרקט), עין יבשה, משקעים צהובים קטנים ברשתית, הצהבה של לובן העין
- דימום של הבתך או מסביב לרשתית (בחלק האחורי של העין)
- תחושת סחרור (ורטיגו);
- דופק מהיר או לא סדיר (פלפיטציות דפיקות לב), קוצר נשימה
- שיעול המעלה ליחה, נזלת, שפעת, הרפס בפה, כאב גרון ואי-נחות בזמן בליעה
- בעיות במערכת העיכול, כולל: הקאה, כאב בטן, קשיי עיכול, עצירות, בטן נפוחה,
- הפרעות בטעם, דלקת בקיבה, טחורים, כלי-דם נפוחים ודימום בושט, גירוי של המעיים
- כאב שיניים
- בעיות בכבד, כולל קריש דם, הצהבה של העור או לובן העין (צהבת), גידול בכבד (ראה 'בעיות בכבד' בסעיף 4 לעיל)
- שינויים בעור, כולל: פריחה, עור יבש, אקזמה, אדמומיות של העור, גרוד, הזעה מוגברת, הזעת לילה, גידולי עור חריגים
- כאב פרקים, כאב גב, כאב בעצמות, כאב בידיים או בכפות הרגליים, התכווצויות שרירים
- רגזנות, תחושה כללית לא טובה, כאב בחזה ואי-נחות
- זיהום באף, סינוסים, גרון ודרכי הנשימה העליונות, הצטננות (דלקת בדרכי הנשימה העליונות)

- דיכאון, חרדה, בעיות שינה, עצבנות

— תגובה במקום הזרקה

— הפרעות בקצב לב

- הרפס בפה

- פגיעה בכבד כתוצאה מתרופות

- נשירת שיער חריגה

- נפיחות בידיים או בכפות הרגליים

### תופעות לוואי שכיחות שיכולות להופיע בבדיקות דם:

- עלייה ב**רמת** סוכר (גלוקוז) בדם

- ירידה במספר תאי דם לבנים

- ירידה ב**רמות** החלבונים בדם

— הרס של תאי דם אדומים (אנמיה המוליטית)

- עלייה ב**רמות** בילירובין בדם (חומר המיוצר על-ידי הכבד)

- שינויים באנזימים השולטים בקרישת דם.

### תופעות לוואי שאינן שכיחות

אלה עשויות לה**שפיע** ב-על עד 1 מכל 100 אנשים:

- כאב במתן שתן.

- הפרעות בקצב לב (הארכת מקטע QT)

- דלקת קיבה ומעי (גסטרואנטריטיס)

- שינויים בעור, כולל שינוי צבע, קילוף, אדמומיות, גירוד והזעה

- הצהבה של לובן העיניים או העור (צהבת)

- כלי דם נפוחים ודימום בגרון (ושט)

- פריחה, חבורה במקום ההזרקה

- ירידה במספר תאי הדם האדומים (אנמיה) הנגרמת כתוצאה מהרס מופרז של תאי

דם אדומים (אנמיה המוליטית)

- בלבול, אי שקט

- פגיעה בכבד כתוצאה מתרופות

- בעיות בכבד, כולל קריש דם

- אי נוחות בחזה

תופעות לוואי בשכיחות שאינה ידועה (לא ניתן להעריך שכיחות מהמידע הזמין):

— שינויים בגוון העור

אם הופיעה תופעת לוואי, אם אחת מתופעות הלוואי מחמירה או כאשר אתה סובל מתופעת

לוואי שלא צינה בעלון, עליך להתייעץ עם הרופא.

תופעות הלוואי הבאות דווחו כקשורות לטיפול עם רבולייז בחולים עם אנמיה אפלסטית

חמורה (SAA):

אם תופעות לוואי אלו הופכות לחמורות, דווח לרופא, רוקח או אחות.

### תופעות לוואי שכיחות מאוד

אלה עשויות לה**שפיע** על ביותר מ- 1 מכל 10 אנשים:

בחילה

— שיעול

—

— כאב ראש

- קוצר נשימה

- כאב באף ובגרון

— חלת

~~כאב בטן~~

- שלשול

- בחילה

~~חברות~~

- כאבי פרקים

~~התכווצויות שרירים~~

- כאב בגפיים (זרועות, רגליים, ידיים וכפות רגליים)

- סחרחורת

- תשישות (הרגשת עייפות רבה)

- חום

~~צמרמורות~~

~~עיניים מגרדות~~

- כאב בטן

~~שלשול~~

~~התכווצויות שרירים~~

~~כאבי פרקים~~

~~נדודי שינה~~

~~התכווצויות שרירים~~

~~נזלת~~

~~- דימום בחניכיים~~

**תופעות לוואי שכיחות מאוד שיכולות להופיע - בבדיקות דם:**

~~עלייה של חלק מאנזימי הכבד (טרנסאמינאזות).~~

~~בדיקות מעבדה עשויות להראות שינויים לא רגילים בתאי מח העצם שלך.~~

**תופעות לוואי שכיחות**

אלה עשויות להופיע להשפיע בעל עד 1 מכל מתוך 10 אנשים:

- חרדה

- דיכאון

- תחושת קור

- הרגשה כללית לא טובה

- בעיות בעיניים; כולל: ראייה מטושטשת ~~אפחות חדה~~, עכירות בעדשת העין (קטרקט),

נקודות או

~~משקעים בעין, עין יבשה, גרד בעין, הצהבה של לובן העיניים או העור או לובן העין.~~

- דימום באף

~~דימום בחניכיים~~

~~שלפוחיות בפה~~

- בעיות במערכת העיכול; כולל: הקאה, שינויים בתיאבון (עלייה או ירידה), כאב או אי-נוחות בבטן,

~~בטן נפוחה, גזים, שינויים בגוון הצואה; עצירות, קשיים בבליעה.~~

- עלפון

- בעיות בעור; כולל: נקודות אדומות או סגולות הנגרמות מדימום לתוך העור

(פטכיה), פריחה, גירוד, נגעים

~~בעור~~

- כאב גב

- כאבי שרירים

- כאב בעצמות

- חולשה

- נפיחות של התנפחות רקמות, בדרך כלל בגפיים התחתונות; עקב הצטברות נוזלים.

- שתן בגוון שונה מהרגיל

- הפרעה באספקת הדם לטחול

### תופעות לוואי שכיחות שיכולות להופיע בבדיקות דם:

- עלייה באנזימים כתוצאה מהרס-מפירוק השרירים (קריאטין פוספוקינאז)
  - הצטברות ברזל בגוף (עודף ברזל)
  - ירידה במספר תאי דם לבנים (ניטרופניה)
  - ירידה ברמת סוכר בדם (היפוגליקמיה)
  - עלייה ברמות בילירובין (חומר המיוצר על-ידי הכבד)
  - עלייה ברמות אנזימי כבד (AST)
  - ירידה ברמות תאי דם לבנים
- שינויים לא רגילים בתאי מח העצם שלך

### תופעות לוואי בשכיחות שאינה ידועה

(לא ניתן להעריך שכיחות מהמידע הזמין):

- שינויים בגוון העור

- התכהות של העור

- הצהבה של העור והעיניים, רגישות סביב הכבד

אם הופיעה תופעת לוואי, אם אחת מתופעות הלוואי מחמירה או כאשר אתה סובל מתופעת לוואי שלא צוינה בעלון, עליך להתייעץ עם הרופא.

### דיווח תופעות לוואי

ניתן לדווח על תופעות לוואי למשרד הבריאות באמצעות לחיצה על הקישור "דיווח על תופעות לוואי עקב טיפול תרופתי" שנמצא בדף הבית של אתר משרד הבריאות ([www.health.gov.il](http://www.health.gov.il)) המפנה לטופס המקוון לדיווח על תופעות לוואי,

או על-ידי כניסה לקישור: <https://sideeffects.health.gov.il/>

<https://forms.gov.il/globaldata/getsequence/getsequence.aspx?formType=AdversEffectMedic@moh.gov.il>

### 4.5. איך לאחסן את התרופה?

מנע הרעלה! תרופה זו וכל תרופה אחרת יש לשמור במקום סגור מחוץ להישג ידם וטווח ראיתם של ילדים ו/או תינוקות ועל-ידי כך תמנע הרעלה. אל תגרום להקאה ללא הוראה מפורשת מהרופא.

אין להשתמש בתרופה אחרי תאריך התפוגה (exp. date) המופיע על גבי האריזה. תאריך התפוגה מתייחס ליום האחרון של אותו חודש.

### תנאי איחסון:

יש לאחסן מתחת ליש לאחסן בטמפרטורה הנמוכה מ- 30°C.

### 5.6. מידע נוסף

נוסף על החומר המרכיב הפעיל, התרופה מכילה גם: טבליות מצופות במינון 25 מ"ג



Microcrystalline cellulose, mannitol (E421), sodium starch glycolate (Type A), hypromellose, titanium dioxide (E171), magnesium stearate, povidone K30, macrogol 400, polysorbate 80.

#### **טבליות מצופות במינון 50 מ"ג**

Microcrystalline cellulose, mannitol (E421), sodium starch glycolate (Type A), hypromellose, povidone K30, magnesium stearate, titanium dioxide (E171), iron oxide yellow (E172), macrogol 400, iron oxide red (E172).

#### **כיצד נראית התרופה ומה תוכן האריזה**

רבולייד 25 מ"ג- טבליות מצופות, עגולות, קמורות משני צדיהן, לבנות, מוחתמות בכיתוב 'GS NX3' ו-'25' בצד אחד.

רבולייד 50 מ"ג- טבליות מצופות, עגולות, קמורות משני צדיהן, חומות, מוחתמות בכיתוב 'GS UFU' ו-'50' בצד אחד.

גדלי אריזה: 14 או 28 טבליות ( יתכן ולא כל גדלי האריזות משווקים).

**בעל הרישום:** נוברטיס ישראל בע"מ, רח' שחם 36, פתח-תקווה.

**יצרן:** גלקסו וולקאם S.A., בורגוס, ספרד.

~~עלון זה נבדק ואושר על ידי משרד הבריאות בתאריך: דצמבר 2017.~~

נערך במאי 2020.

#### **מספר רישום התרופה בפנקס התרופות הממלכתי במשרד הבריאות:**

רבולייד 25 מ"ג: 143 55 32036

רבולייד 50 מ"ג: 143 56 32037

לשם הפשטות ולהקלת הקריאה, עלון זה נוסח בלשון זכר. על אף זאת, התרופה מיועדת לבני שני המינים.

*The format of this leaflet was determined by the Ministry of Health and its content was checked and approved in December 2017*

# Revolade<sup>®</sup> 25 mg Revolade<sup>®</sup> 50 mg

## 1. NAME OF THE MEDICINAL PRODUCT

Revolade<sup>®</sup> 25 mg, film-coated tablets

Revolade<sup>®</sup> 50 mg, film-coated tablets

## 2. QUALITATIVE AND QUANTITATIVE COMPOSITION

Revolade<sup>®</sup> 25 mg film-coated tablets

Each ~~Revolade 25~~ film-coated tablet contains eltrombopag olamine equivalent to 25 mg eltrombopag.

Revolade<sup>®</sup> 50 mg film-coated tablets

Each ~~Revolade 50~~ film-coated tablet contains eltrombopag olamine equivalent to 50 mg eltrombopag.

For the full list of excipients, see section 6.1.

## 3. PHARMACEUTICAL FORM

Film-coated tablet.

Revolade 25mg film-coated tablets

~~White, r~~Round, biconvex, ~~white~~ film-coated tablet debossed with 'GS NX3' and '25' on one side.

Revolade 50mg film-coated tablets

~~Brown, r~~Round, biconvex, ~~brown~~ film-coated tablet debossed with 'GS UFU' and '50' on one side.

## 4. CLINICAL PARTICULARS

### 4.1 Therapeutic indications

Revolade is indicated for the treatment of ~~previously treated~~ patients aged 6 years and above with ~~chronic idiopathic primary immune thrombocytopenia~~ purpura (ITP) lasting 6 months or longer from diagnosis to increase platelet count and reduce or prevent bleeding, and who are refractory to other treatments (e.g. corticosteroids, immunoglobulins) (see sections 4.2 and 5.1).

Revolade is indicated for the treatment of thrombocytopenia in adult patients with chronic hepatitis C to allow the initiation and maintenance of interferon-based therapy.

-Revolade is indicated in combination with standard immunosuppressive therapy for the first-line treatment of adult and paediatric patients 6 years and older with severe aplastic anaemia.

Revolade is indicated for the treatment of adult patients with severe aplastic anaemia who have had an insufficient response to immunosuppressive therapy.

## 4.2 Posology and method of administration

Eltrombopag treatment should be initiated by and remain under the supervision of a physician who is experienced in the treatment of haematological diseases or the management of chronic hepatitis C and its complications.

### Posology

Eltrombopag dosing requirements must be individualised based on the patient's platelet counts. The objective of treatment with eltrombopag should not be to normalise platelet counts.

### *Chronic immune (primary idiopathic) thrombocytopenia*

The lowest dose of eltrombopag to achieve and maintain a platelet count  $\geq 50,000/\mu\text{l}$  should be used. Dose adjustments are based upon the platelet count response. Eltrombopag must not be used to normalise platelet counts. In clinical studies, platelet counts generally increased within 1 to 2 weeks after starting eltrombopag and decreased within 1 to 2 weeks after discontinuation.

### *Adults and paediatric population aged 6 to 17 years*

The recommended starting dose of eltrombopag is 50 mg once daily. For patients of East Asian ancestry (such as Chinese, Japanese, Taiwanese, Korean or Thai), eltrombopag should be initiated at a reduced dose of 25 mg once daily (see section 5.2).

### *Monitoring and dose adjustment*

After initiating eltrombopag, the dose must be adjusted to achieve and maintain a platelet count  $\geq 50,000/\mu\text{l}$  as necessary to reduce the risk for bleeding. A daily dose of 75 mg must not be exceeded.

Clinical haematology and liver tests should be monitored regularly throughout therapy with eltrombopag and the dose regimen of eltrombopag modified based on platelet counts as outlined in Table 1. During therapy with eltrombopag full blood counts (FBCs), including platelet count and peripheral blood smears, should be assessed weekly until a stable platelet count ( $\geq 50,000/\mu\text{l}$  for at least 4 weeks) has been achieved. FBCs including platelet counts and peripheral blood smears should be obtained monthly thereafter.

**Table 1 Dose adjustments of eltrombopag in ITP patients**

Platelet count	Dose adjustment or response
<50,000/ $\mu$ l following at least 2 weeks of therapy	Increase daily dose by 25 mg to a maximum of 75 mg/day*.
$\geq$ 50,000/ $\mu$ l to $\leq$ 150,000/ $\mu$ l	Use lowest dose of eltrombopag and/or concomitant ITP treatment to maintain platelet counts that avoid or reduce bleeding.
>150,000/ $\mu$ l to $\leq$ 250,000/ $\mu$ l	Decrease the daily dose by 25 mg. Wait 2 weeks to assess the effects of this and any subsequent dose adjustments <sup>†</sup> .
>250,000/ $\mu$ l	Stop eltrombopag; increase the frequency of platelet monitoring to twice weekly.  Once the platelet count is $\leq$ 100,000/ $\mu$ l, reinstate therapy at a daily dose reduced by 25 mg.

\* ~~For~~ patients taking 25 mg eltrombopag once every other day, increase dose to 25 mg ~~once~~ daily.

<sup>†</sup> ~~For~~ patients taking 25 mg eltrombopag once daily, consideration should be given to ~~dosing~~ at 12.5 mg given as 25 mg once every other day.

Eltrombopag can be administered in addition to other ITP medicinal products. The dose regimen of concomitant ITP medicinal products should be modified, as medically appropriate, to avoid excessive increases in platelet counts during therapy with eltrombopag.

It is necessary to wait for at least 2 weeks to see the effect of any dose adjustment on the patient's platelet response prior to considering another dose adjustment.

The standard eltrombopag dose adjustment, either decrease or increase, would be 25 mg once daily.

#### *Discontinuation*

Treatment with eltrombopag should be discontinued if the platelet count does not increase to a level sufficient to avoid clinically important bleeding after ~~four~~ 4 weeks of eltrombopag therapy at 75 mg once daily.

Patients should be clinically evaluated periodically and continuation of treatment should be decided on an individual basis by the treating physician. In non-splenectomised patients this should include evaluation relative to splenectomy. The reoccurrence of thrombocytopenia is possible upon discontinuation of treatment (see section 4.4).

#### *Chronic hepatitis C (HCV) associated thrombocytopenia*

When eltrombopag is given in combination with antivirals reference should be made to the full summary of product characteristics of the respective coadministered medicinal products for comprehensive details of relevant safety information or contraindications.

In clinical studies, platelet counts generally began to increase within 1 week of starting eltrombopag. The aim of treatment with eltrombopag should be to achieve the minimum level of platelet counts needed to initiate antiviral therapy, in adherence to clinical practice recommendations. During antiviral therapy, the aim of treatment should be to keep platelet counts at a level that prevents the risk of bleeding complications, normally around 50,000-75,000/ $\mu$ l. Platelet counts  $>$ 75,000/ $\mu$ l should be avoided. The lowest dose of eltrombopag needed to achieve the targets should be used. Dose adjustments are based upon the platelet count response.

### Initial dose regimen

Eltrombopag should be initiated at a dose of 25 mg once daily. No dosage adjustment is necessary for HCV patients of East Asian ancestry or patients with mild hepatic impairment (see section 5.2).

### Monitoring and dose adjustment

The dose of eltrombopag should be adjusted in 25 mg increments every 2 weeks as necessary to achieve the target platelet count required to initiate anti-viral therapy. Platelet counts should be monitored every week prior to starting antiviral therapy. On initiation of antiviral therapy the platelet count may fall, so immediate eltrombopag dose adjustments should be avoided (see Table 2).

During antiviral therapy, the dose of eltrombopag should be adjusted as necessary to avoid dose reductions of peginterferon due to decreasing platelet counts that may put patients at risk of bleeding (see Table 2). Platelet counts should be monitored weekly during antiviral therapy until a stable platelet count is achieved, normally around 50,000-75,000/ $\mu$ l. FBCs including platelet counts and peripheral blood smears should be obtained monthly thereafter. Dose reductions on the daily dose by 25 mg should be considered if platelet counts exceed the required target. It is recommended to wait for 2 weeks to assess the effects of this and any subsequent dose adjustments.

A dose of 75 mg eltrombopag once daily must not be exceeded.

**Table 2** Dose adjustments of eltrombopag in HCV patients during antiviral therapy

Platelet count	Dose adjustment or response
<50,000/ $\mu$ l following at least 2 weeks of therapy	Increase daily dose by 25 mg to a maximum of 75 mg/day.
$\geq$ 50,000/ $\mu$ l to $\leq$ 100,000/ $\mu$ l	Use lowest dose of eltrombopag as necessary to avoid dose reductions of peginterferon.
>100,000/ $\mu$ l to $\leq$ 150,000/ $\mu$ l	Decrease the daily dose by 25 mg. Wait 2 weeks to assess the effects of this and any subsequent dose adjustments <sup>♦</sup> .
>150,000/ $\mu$ l	Stop eltrombopag; increase the frequency of platelet monitoring to twice weekly.  Once the platelet count is $\leq$ 100,000/ $\mu$ l, reinitiate therapy at a daily dose reduced by 25 mg*.

\* ~~For~~ For patients taking 25 mg eltrombopag once daily, consideration should be given to reinitiating dosing at 25 mg every other day.

<sup>♦</sup> ~~On~~ On initiation of antiviral therapy the platelet count may fall, so immediate eltrombopag dose reductions should be avoided.

### Discontinuation

If after 2 weeks of eltrombopag therapy at 75 mg the required platelet level to initiate antiviral therapy is not achieved, eltrombopag should be discontinued.

Eltrombopag treatment should be terminated when antiviral therapy is discontinued unless otherwise justified. Excessive platelet count responses or important liver test abnormalities also necessitate discontinuation.

### Severe aplastic anaemia (SAA)

### **First-Line severe aplastic anaemia**

Initiate eltrombopag concurrently with standard immunosuppressive therapy [see section 5.1].

Initial Dose Regimen:

The recommended initial dose regimen is listed in Table 3. Do not exceed the initial dose of eltrombopag.

**Table 3 Recommended initial eltrombopag dose regimen in the first-line treatment of severe aplastic anaemia**

<b><u>Age</u></b>	<b><u>Dose Regimen</u></b>
<u>Patients 12 Years and Older</u>	<u>150 mg once daily for 6 months</u>
<u>Paediatric Patients 6 to 11 Years</u>	<u>75 mg once daily for 6 months</u>

For patients with severe aplastic anaemia of East Asian ancestry (such as Chinese, Japanese, Taiwanese, Korean, or Thai) or those with mild, moderate, or severe hepatic impairment (Child-Pugh Class A, B, C), decrease the initial eltrombopag dose by 50% as listed in Table 4.

If baseline alanine aminotransferase (ALT) or aspartate aminotransferase (AST) levels are > 6 x upper limit of Normal (ULN), do not initiate eltrombopag until transaminase levels are < 5 x ULN. Determine the initial dose for these patients based on Table 3 or Table 4.

**Table 4 Recommended initial Eltrombopag Dose Regimen for Patients of East Asian Ancestry or Those With Mild, Moderate, or Severe Hepatic Impairment (Child-Pugh Class A, B, C) in the First-Line Treatment of Severe Aplastic Anaemia**

<b><u>Age</u></b>	<b><u>Dose Regimen</u></b>
<u>Patients 12 Years and Older</u>	<u>75 mg once daily for 6 months</u>
<u>Paediatric Patients 6 to 11 Years</u>	<u>75 mg every other day for 6 months</u>

Monitoring and Dose Adjustment for eltrombopag: Perform clinical haematology and liver tests regularly throughout therapy with eltrombopag [see section 4.4].

Modify the dosage regimen of eltrombopag based on platelet counts as outlined in Table 5.

**Table 5 Dose adjustments of eltrombopag for Elevated Platelet Counts in the First-Line Treatment of Severe Aplastic Anaemia**

<b><u>Platelet Count Result</u></b>	<b><u>Dose Adjustment or Response</u></b>
<u>&gt; 200 x 10<sup>9</sup>/L to &lt; 400 x 10<sup>9</sup>/L</u>	<u>Decrease the daily dose by 25 mg every 2 weeks to lowest dose that maintains platelet count ≥ 50 x 10<sup>9</sup>/L.</u> <u>In paediatric patients under 12 years of age, decrease the dose by 12.5 mg*.</u>
<u>&gt; 400 x 10<sup>9</sup>/L</u>	<u>Discontinue eltrombopag for one week. Once the platelet count is &lt; 200 x 10<sup>9</sup>/L, reinitiate eltrombopag at a daily dose reduced by 25 mg (or 12.5 mg in paediatric patients under 12 years of age*).</u>

\* The dose should be decreased by 25 mg every other day.

Table 6 summarizes the recommendations for dose interruption, reduction, or discontinuation of eltrombopag in the management of elevated liver transaminase levels and thromboembolic events.

**Table 6 Recommended Dose Modifications for Eltrombopag for ALT or AST Elevations and Thromboembolic Events**

<u>Event</u>	<u>Recommendation</u>
<u>ALT or AST Elevations</u>	<p><u>Increase in ALT or AST &gt; 6 x ULN</u>  <u>Discontinue eltrombopag. Once ALT or AST is &lt; 5 x ULN, reinitiate eltrombopag at the same dose.</u></p> <p><u>Increase in ALT or AST &gt; 6 x ULN after reinitiating eltrombopag</u>  <u>Discontinue eltrombopag and monitor ALT or AST at least every 3 to 4 days. Once ALT or AST is &lt; 5 x ULN, reinitiate eltrombopag at a daily dose reduced by 25 mg compared to the previous dose.</u></p> <p><u>If ALT or AST returns to &gt; 6 x ULN on the reduced dose</u>  <u>Reduce the daily dose of eltrombopag by 25 mg until ALT or AST is &lt; 5 x ULN.</u></p> <p><u>In paediatric patients under 12 years of age, reduce the daily dose by at least 15% to the nearest dose that can be administered.</u></p>
<u>Thromboembolic events (e.g., deep vein thrombosis, pulmonary embolus, stroke, myocardial infarction)</u>	<u>Discontinue eltrombopag but remain on horse antithymocyte globulin (h-ATG)* and cyclosporine.</u>

The total duration of eltrombopag treatment is 6 months.

\* h-ATG was used in the single-arm, single-centre, open-label study [see section 5.1]. If h-ATG is not available, substitution with the appropriate local immunosuppressive therapy based on physician's discretion is recommended. The local prescribing information for this therapy/these therapies or local treatment guidelines should be consulted for dosing information.

### Refractory severe aplastic anaemia

Use the lowest dose of eltrombopag to achieve and maintain a haematologic response. Dose adjustments are based upon the platelet count. Haematologic response requires dose titration, generally up to 150 mg, and may take up to 16 weeks after starting eltrombopag (see section 5.1).

#### *Initial Dose Regimen*

Initiate eltrombopag at a dose of 50 mg once daily.

For patients with severe aplastic anaemia ~~in patients~~ of East Asian ancestry or those with mild, moderate, or severe hepatic impairment (Child-Pugh Class A, B, C), initiate eltrombopag at a reduced dose of 25 mg once daily (see Special populations and section 5.2).

#### *Monitoring and Dose Adjustment*

Adjust the dose of eltrombopag in 50-mg increments every 2 weeks as necessary to achieve the target platelet count  $\geq 50,000/\mu\text{l}$  as necessary. Do not exceed a dose of 150 mg daily. Monitor clinical haematology and liver tests regularly throughout therapy with eltrombopag and modify the dosage regimen of eltrombopag based on platelet counts as outlined in Table 37.

**Table 3-7 Dose adjustments of eltrombopag in patients with refractory severe aplastic anaemia**

Platelet Count Result	Dose Adjustment or Response
<50,000/ $\mu$ l following at least 2 weeks of eltrombopag	Increase daily dose by 50 mg to a maximum of 150 mg/day.  -For patients taking 25 mg once daily, increase the dose to 50 mg daily before increasing the dose amount by 50 mg.
$\geq$ 200,000/ $\mu$ l to $\leq$ 400,000/ $\mu$ l at any time	Decrease the daily dose by 50 mg. Wait 2 weeks to assess the effects of this and any subsequent dose adjustments.
>400,000/ $\mu$ l	Stop eltrombopag for 1 week.  Once the platelet count is <150,000/ $\mu$ l, reinitiate therapy at a dose reduced by 50 mg.
>400,000/ $\mu$ l after 2 weeks of therapy at lowest dose of eltrombopag	Discontinue eltrombopag

For patients who achieve tri-lineage response, including transfusion independence, lasting at least 8 weeks: the dose of eltrombopag may be reduced by 50% (see section 5.1). If counts remain stable after 8 weeks at the reduced dose, then discontinue eltrombopag and monitor blood counts. If platelet counts drop to less than < 30,000/ $\mu$ l, hemoglobin to less than 9 g/dL, or ANC to less than  $0.5 \times 10^9/L$ , eltrombopag may be reinitiated at the previous effective dose.

#### *Discontinuation*

If no haematologic response has occurred after 16 weeks of therapy with eltrombopag, discontinue therapy. If new cytogenetic abnormalities are observed, consider discontinuation of eltrombopag (see section 4.8). Excessive platelet count responses (as outlined in Table 3-7) or important liver test abnormalities also necessitate discontinuation of eltrombopag (see section 4.4).

#### *Special populations*

##### *Renal impairment*

No dose adjustment is necessary in patients with renal impairment. Patients with impaired renal function should use eltrombopag with caution and close monitoring, for example by testing serum creatinine and/or performing urine analysis (see section 5.2).

##### *Hepatic impairment*

Eltrombopag should not be used in ITP patients with hepatic impairment (Child-Pugh score  $\geq$  5) unless the expected benefit outweighs the identified risk of portal venous thrombosis (see section 4.4).

If the use of eltrombopag is deemed necessary for ITP patients with hepatic impairment the starting dose must be 25 mg once daily. After initiating the dose of eltrombopag in patients with hepatic impairment an interval of 3 weeks should be observed before increasing the dose.

No dose adjustment is required for thrombocytopenic patients with chronic HCV and mild hepatic impairment (Child-Pugh score  $\leq$  6). Chronic HCV patients and refractory severe aplastic anaemia patients with hepatic impairment should initiate eltrombopag at a dose of 25 mg once daily (see section 5.2). After initiating the dose of eltrombopag in patients with hepatic impairment an interval of 2 weeks should be observed before increasing the dose.



There is an increased risk for adverse events, including hepatic decompensation and thromboembolic events, in thrombocytopenic patients with advanced chronic liver disease treated with eltrombopag, either in preparation for invasive procedure or in HCV patients undergoing antiviral therapy (see sections 4.4 and 4.8).

In a clinical trial in patients with severe aplastic anaemia who had not received prior definitive immunosuppressive therapy, patients with baseline ALT or AST > 5 x ULN were ineligible to participate. If a patient with hepatic impairment (Child-Pugh Class A, B, C) initiates therapy with eltrombopag for the first-line treatment of severe aplastic anaemia, reduce the initial dose [see sections 4.2 and 4.4].

### *Elderly*

There are limited data on the use of eltrombopag in ITP patients aged 65 years and older and no clinical experience in ITP patients aged over 85 years. In the clinical studies of eltrombopag, overall no clinically significant differences in safety of eltrombopag were observed between ~~subjects~~patients aged at least 65 years and younger ~~subjects~~patients. Other reported clinical experience has not identified differences in responses between the elderly and younger patients, but greater sensitivity of some older individuals cannot be ruled out (see section 5.2).

There are limited data on the use of eltrombopag in HCV and SAA patients aged over 75 years. Caution should be exercised in these patients (see section 4.4).

### *East Asian patients*

For patients of East Asian ancestry (such as Chinese, Japanese, Taiwanese, Korean or Thai), ~~including those with hepatic impairment,~~ eltrombopag should be initiated at a dose of 25 mg once daily for treatment of ITP, HCV and refractory SAA, and for treatment of patients with 1L SAA refer to Table 4. For treatment of patients with hepatic impairment, refer to hepatic impairment section above (see section 5.2).

Patient platelet count should continue to be monitored and the standard criteria for further dose modification followed.

### *Paediatric population*

Revolade tablets are not indicated for use in children under the age of 6 years with ~~chronic~~ ITP. The safety and efficacy of eltrombopag has not been established in children and adolescents (<18 years) with chronic HCV related thrombocytopenia or refractory SAA. No data are available.

Revolade tablets are indicated for definitive immunosuppressive therapy-naïve SAA aged 6 years and older -

### Method of administration

Oral use.

The tablets should be taken at least two hours before or four hours -after any products such as antacids, dairy products (or other calcium containing food products), or mineral supplements containing polyvalent cations (e.g. iron, calcium, magnesium, aluminium, selenium and zinc) (see sections 4.5 and 5.2).

### 4.3 Contraindications

Hypersensitivity to eltrombopag or to any of the excipients, listed in section 6.1.

### 4.4 Special warnings and precautions for use

There is an increased risk for adverse reactions, including potentially fatal hepatic decompensation and thromboembolic events, in thrombocytopenic HCV patients with advanced chronic liver disease, as defined by low albumin levels  $\leq 35$  g/L or model for end stage liver disease (MELD) score  $\geq 10$ , when treated with eltrombopag in combination with interferon-based therapy. In addition, the benefits of treatment in terms of the proportion achieving sustained virological response (SVR) compared with placebo were modest in these patients (especially for those with baseline albumin  $\leq 35$ g/L) compared with the group overall. Treatment with eltrombopag in these patients should be initiated only by physicians experienced in the management of advanced HCV, and only when the risks of thrombocytopenia or withholding antiviral therapy necessitate intervention. If treatment is considered clinically indicated, close monitoring of these patients is required.

#### Combination with direct-acting antiviral agents

Safety and efficacy have not been established in combination with direct-acting antiviral agents approved for treatment of chronic hepatitis C infection.

#### Risk of hepatotoxicity

Eltrombopag administration can cause abnormal liver function and severe hepatotoxicity, which might be life-threatening (see section 4.8). ~~In the controlled clinical studies in chronic ITP with eltrombopag, increases in serum alanine aminotransferase (ALT), aspartate aminotransferase (AST) and bilirubin were observed (see section 4.8).~~

~~These findings were mostly mild (Grade 1-2), reversible and not accompanied by clinically significant symptoms that would indicate an impaired liver function. Across the 3 placebo controlled studies in adults with chronic ITP, 1 patient in the placebo group and 1 patient in the eltrombopag group experienced a Grade 4 liver test abnormality. In two placebo controlled studies in paediatric patients (aged 1 to 17 years) with chronic ITP, ALT  $\geq 3$  times the upper limit of normal ( $\times$  ULN) was reported in 4.7% and 0% of the eltrombopag and placebo groups, respectively.~~

~~In 2 controlled clinical studies in patients with HCV, ALT or AST  $\geq 3 \times$  ULN was reported in 34 % and 38 % of the eltrombopag and placebo groups, respectively. Most patients receiving eltrombopag in combination with peginterferon / ribavirin therapy will experience indirect hyperbilirubinaemia. Overall, total bilirubin  $\geq 1.5 \times$  ULN was reported in 76 % and 50 % of the eltrombopag and placebo groups, respectively.~~

Serum alanine aminotransferase (-ALT), aspartate aminotrasferase (-AST) and bilirubin should be measured prior to initiation of eltrombopag, every 2 weeks during the dose adjustment phase and monthly following establishment of a stable dose. Eltrombopag inhibits UGT1A1 and OATP1B1, which may lead to indirect hyperbilirubinaemia. If bilirubin is elevated fractionation should be performed. Abnormal serum liver tests should be evaluated with repeat testing within 3 to 5 days. If the abnormalities are confirmed, serum liver tests should be monitored until the abnormalities resolve, stabilise, or return to baseline levels. Eltrombopag should be discontinued if ALT levels increase ( $\geq 3 \times$  times the upper limit of normal [ $\times$  ULN] in patients with normal liver function, or  $\geq 3 \times$  baseline or  $> 5 \times$  ULN, whichever is the lower, in patients with pre-treatment elevations in transaminases) and are:

- progressive, or
- persistent for  $\geq 4$  weeks, or
- accompanied by increased direct bilirubin, or

- accompanied by clinical symptoms of liver injury or evidence for hepatic decompensation.

Caution is required when administering eltrombopag to patients with hepatic disease. In ITP and refractory SAA patients a lower starting dose of eltrombopag should be used. Close monitoring is required when administering to patients with hepatic impairment (see section 4.2).

#### First-line treatment of severe aplastic anaemia

Measure ALT, AST, and bilirubin prior to initiation of eltrombopag, every other day while hospitalized for h-ATG therapy, and then every 2 weeks during treatment. During treatment, manage increases in ALT or AST levels as recommended in Table 6.

#### Hepatic decompensation (use with interferon)

Hepatic decompensation in patients with chronic hepatitis C: Monitoring is required in patients with low albumin levels ( $\leq 35$  g/L) or with MELD score  $\geq 10$  at baseline.

Chronic HCV patients with cirrhosis may be at risk of hepatic decompensation when receiving alfa interferon therapy. In 2 controlled clinical studies in thrombocytopenic patients with HCV, hepatic decompensation (ascites, hepatic encephalopathy, variceal haemorrhage, spontaneous bacterial peritonitis) ~~was reported~~ occurred more frequently in the eltrombopag arm (11%) than in the placebo arm (6%). In patients with low albumin levels ( $\leq 35$  g/L) or with a MELD score  $\geq 10$  at baseline, there was a ~~three~~3-fold greater risk of hepatic decompensation and an increase in the risk of a fatal adverse event compared to those with less advanced liver disease. In addition, the benefits of treatment in terms of the proportion achieving SVR compared with placebo were modest in these patients (especially for those with baseline albumin  $\leq 35$  g/L) compared with the group overall. Eltrombopag should only be administered to such patients after careful consideration of the expected benefits in comparison with the risks. Patients with these characteristics should be closely monitored for signs and symptoms of hepatic decompensation. The respective interferon summary of product characteristics should be referenced for discontinuation criteria. Eltrombopag should be terminated if antiviral therapy is discontinued for hepatic decompensation.

#### Thrombotic/~~t~~Thromboembolic complications

In controlled studies in thrombocytopenic patients with HCV receiving interferon-based therapy (n = 1,439), 38 out of 955 ~~subjects~~patients (4%) treated with eltrombopag and 6 out of 484 ~~subjects~~patients (1%) in the placebo group experienced thromboembolic events (TEEs). Reported thrombotic/thromboembolic complications included both venous and arterial events. The majority of TEEs were non-serious and resolved by the end of the study. Portal vein thrombosis was the most common TEE in both treatment groups (2% in patients treated with eltrombopag versus <1% for placebo). No specific temporal relationship between start of treatment and event of TEE were observed. Patients with low albumin levels ( $\leq 35$  g/L) or MELD  $\geq 10$  had a ~~twofold~~2-fold greater risk of TEEs than those with higher albumin levels; those aged  $\geq 60$  years had a 2-fold greater risk of TEEs compared to younger patients. Eltrombopag should only be administered to such patients after careful consideration of the expected benefits in comparison with the risks. Patients should be closely monitored for signs and symptoms of TEE.

The risk of TEEs has been found to be increased in patients with chronic liver disease (CLD) treated with 75 mg eltrombopag once daily for ~~two~~2 weeks in preparation for invasive procedures. Six of 143 (4%) adult patients with CLD receiving eltrombopag experienced TEEs (all of the portal venous system) and ~~two~~2 of 145 (1%) ~~subjects~~patients in the placebo group experienced TEEs (one in the

portal venous system and one myocardial infarction). Five of the 6 patients treated with eltrombopag experienced the thrombotic complication at a platelet count > 200,000/ $\mu$ l and within 30 days of the last dose of eltrombopag. Eltrombopag is not indicated for the treatment of thrombocytopenia in patients with chronic liver disease in preparation for invasive procedures.

In eltrombopag clinical ~~trials~~ studies in ITP thromboembolic events were observed at low and normal platelet counts. Caution should be used when administering eltrombopag to patients with known risk factors for thromboembolism including but not limited to inherited (e.g. Factor V Leiden) or acquired risk factors (e.g. ATIII deficiency, antiphospholipid syndrome), advanced age, patients with prolonged periods of immobilisation, malignancies, contraceptives and hormone replacement therapy, surgery/trauma, obesity and smoking. Platelet counts should be closely monitored and consideration given to reducing the dose or discontinuing eltrombopag treatment if the platelet count exceeds the target levels (see section 4.2). The risk-benefit balance should be considered in patients at risk of ~~thromboembolic events~~ (TEEs) of any aetiology.

No case of TEE was identified from a clinical study in refractory SAA, however the risk of these events cannot be excluded in this patient population due to the limited number of exposed patients. As the highest authorised dose is indicated for patients with SAA (150 mg/day) and due to the nature of the reaction, TEEs might be expected in this patient population.

Eltrombopag should not be used in ITP patients with hepatic impairment (Child-Pugh score  $\geq$ 5) unless the expected benefit outweighs the identified risk of portal venous thrombosis. When treatment is considered appropriate, caution is required when administering eltrombopag to patients with hepatic impairment (see sections 4.2 and 4.8).

#### Bleeding following discontinuation of eltrombopag

Thrombocytopenia is likely to reoccur in ITP patients upon discontinuation of treatment with eltrombopag. Following discontinuation of eltrombopag, platelet counts return to baseline levels within 2 weeks in the majority of patients, which increases the bleeding risk and in some cases may lead to bleeding. This risk is increased if eltrombopag treatment is discontinued in the presence of anticoagulants or anti-platelet agents. It is recommended that, if treatment with eltrombopag is discontinued, ITP treatment be restarted according to current treatment guidelines. Additional medical management may include cessation of anticoagulant and/or anti-platelet therapy, reversal of anticoagulation, or platelet support. Platelet counts must be monitored weekly for 4 weeks following discontinuation of eltrombopag.

In HCV clinical ~~trials~~ studies, a higher incidence of gastrointestinal bleeding, including serious and fatal cases, was reported following discontinuation of peginterferon, ribavirin, and eltrombopag. Following discontinuation of therapy, patients should be monitored for any signs or symptoms of gastrointestinal bleeding.

#### Bone marrow reticulin formation and risk of bone marrow fibrosis

Eltrombopag may increase the risk for development or progression of reticulin fibres within the bone marrow. The relevance of this finding, as with other thrombopoietin receptor (TPO-R) agonists, has not been established yet.

Prior to initiation of eltrombopag, the peripheral blood smear should be examined closely to establish a baseline level of cellular morphologic abnormalities. Following identification of a stable dose of eltrombopag, full blood count (FBC) with white blood cell count (WBC) differential should be performed monthly. If immature or dysplastic cells are observed, peripheral blood smears should be examined for new or worsening morphological abnormalities (e.g. teardrop and nucleated red blood cells, immature white blood cells) or cytopenia(s). If the patient develops new or worsening morphological abnormalities or cytopenia(s), treatment with eltrombopag should be discontinued and a bone marrow biopsy considered, including staining for fibrosis.

## Progression of existing myelodysplastic syndrome (MDS)

There is a theoretical concern that TPO-R agonists may stimulate the progression of existing haematological malignancies such as MDS. TPO-R agonists are growth factors that lead to thrombopoietic progenitor cell expansion, differentiation and platelet production. The TPO-R is predominantly expressed on the surface of cells of the myeloid lineage. For TPO-R agonists there is a concern that they may stimulate the progression of existing haematopoietic malignancies such as MDS.

In clinical studies with a TPO-R agonist in patients with MDS, cases of transient increases in blast cell counts were observed and cases of MDS disease progression to acute myeloid leukaemia (AML) were reported.

The diagnosis of ITP or SAA in adults and elderly patients should be confirmed by the exclusion of other clinical entities presenting with thrombocytopenia, in particular the diagnosis of MDS must be excluded. Consideration should be given to performing a bone marrow aspirate and biopsy over the course of the disease and treatment, particularly in patients over 60 years of age, those with systemic symptoms, or abnormal signs such as increased peripheral blast cells.

The effectiveness and safety of eltrombopag Revolade have not been established for the treatment of use in other thrombocytopenic conditions including chemotherapy induced thrombocytopenia due to MDS. Eltrombopag Revolade should not be used outside of clinical trials studies for the treatment of thrombocytopenia due to MDS, or any other cause of thrombocytopenia other than the approved indications.

## Cytogenetic abnormalities and progression to MDS/AML in patients with SAA:

Cytogenetic abnormalities are known to occur in SAA patients. It is not known whether eltrombopag increases the risk of cytogenetic abnormalities in patients with SAA.

-In the phase II refractory SAA clinical study with eltrombopag with a starting dose of 50 mg/day (escalated every 2 weeks to a maximum of 150 mg/day) (ELT112523), the incidence of new cytogenetic abnormalities was observed in 17.1% of adult patients [87/43-41 (where 5-4 of them had changes in chromosome 7)]. The median time on study to a cytogenetic abnormality was 2.9 months.

In the phase II refractory SAA clinical study with eltrombopag at a dose of 150 mg/day (with ethnic or age related modifications as indicated) (ELT116826), the incidence of new cytogenetic abnormalities was observed in 22.6% of adult patients [7/31 (where 3 of them had changes in chromosome 7)]. All 7 patients had normal cytogenetics at baseline. Six patients had cytogenetic abnormality at Month 3 of eltrombopag therapy and one patient had cytogenetic abnormality at Month 6.

In clinical trials studies with eltrombopag in SAA, 4% of patients (5/133) were diagnosed with MDS. The median time to diagnosis was 3 months from the start of eltrombopag treatment.

For SAA patients refractory to or heavily pretreated with prior immunosuppressive therapy, bone marrow examination with aspirations for cytogenetics is recommended prior to initiation of eltrombopag, at 3 months of treatment and 6 months thereafter. If new cytogenetic abnormalities are detected, it must be evaluated whether continuation of eltrombopag is appropriate.

## Ocular changes

Cataracts were observed in toxicology studies of eltrombopag in rodents (see section 5.3). In controlled studies in thrombocytopenic patients with HCV receiving interferon therapy (n = 1,439), progression of pre-existing baseline cataract(s) or incident cataracts was reported in 8 % of the eltrombopag group and 5 % of the placebo group. Retinal haemorrhages, mostly Grade 1 or 2, have

been reported in HCV patients receiving interferon, ribavirin and eltrombopag (2 % of the eltrombopag group and 2 % of the placebo group). Haemorrhages occurred on the surface of the retina (preretinal), under the retina (subretinal), or within the retinal tissue. Routine ophthalmologic monitoring of patients is recommended.

#### QT/QTc prolongation

A QTc study in healthy volunteers dosed 150 mg eltrombopag per day did not show a clinically significant effect on cardiac repolarisation. QTc interval prolongation has been reported in clinical ~~trials studies~~ of patients with ITP and thrombocytopenic patients with HCV. The clinical significance of these QTc prolongation events is unknown.

#### Loss of response to eltrombopag

A loss of response or failure to maintain a platelet response with eltrombopag treatment within the recommended dosing range should prompt a search for causative factors, including an increased bone marrow reticulin.

#### Paediatric population

The above warnings and precautions for ITP and definitive immunosuppressive therapy-naïve SAA also apply to the paediatric population.

#### Interference with laboratory tests

Eltrombopag is highly coloured and so has the potential to interfere with some laboratory tests. Serum discolouration and interference with total bilirubin and creatinine testing have been reported in patients taking Revolade. If the laboratory results and clinical observations are inconsistent, re-testing using another method may help in determining the validity of the result.

## **4.5 Interaction with other medicinal products and other forms of interaction**

### Effects of eltrombopag on other medicinal products

#### HMG CoA reductase inhibitors

~~In vitro studies demonstrated that eltrombopag is not a substrate for the organic anion transporter polypeptide, OATP1B1, but is an inhibitor of this transporter. In vitro studies also demonstrated that eltrombopag is a breast cancer resistance protein (BCRP) substrate and inhibitor.~~ Administration of eltrombopag 75 mg once daily for 5 days with a single 10 mg dose of the OATP1B1 and BCRP substrate rosuvastatin to 39 healthy adult subjects increased plasma rosuvastatin C<sub>max</sub> 103% (90% confidence interval [CI]: 82%, 126%) and AUC<sub>0-∞</sub> 55% (90 % CI: 42%, 69%). Interactions are also expected with other HMG-CoA reductase inhibitors, including atorvastatin, fluvastatin, lovastatin, pravastatin and simvastatin. When co-administered with eltrombopag, a reduced dose of statins should be considered and careful monitoring for statin adverse reactions should be undertaken (see section 5.2).

#### OATP1B1 and BCRP substrates

Concomitant administration of eltrombopag and OATP1B1 (e.g. methotrexate) and BCRP (e.g. topotecan and methotrexate) substrates should be undertaken with caution (see section 5.2).

#### Cytochrome P450 substrates

In studies ~~utilizing~~utilising human liver microsomes, eltrombopag (up to 100 µM) showed no *in vitro* inhibition of the CYP450 enzymes 1A2, 2A6, 2C19, 2D6, 2E1, 3A4/5, and 4A9/11 and was an inhibitor of CYP2C8 and CYP2C9 as measured using paclitaxel and diclofenac as the probe substrates. Administration of eltrombopag 75 mg once daily for 7 days to 24 healthy male subjects did not inhibit or induce the metabolism of probe substrates for 1A2 (caffeine), 2C19 (omeprazole), 2C9 (flurbiprofen), or 3A4 (midazolam) in humans. No clinically significant interactions are expected when eltrombopag and CYP450 substrates are co-administered (see section 5.2).

### HCV protease inhibitors

Dose adjustment is not required when eltrombopag is co-administered with either telaprevir or boceprevir. Co-administration of a single dose of eltrombopag 200 mg with telaprevir 750 mg every 8 hours did not alter plasma telaprevir exposure.

Co-administration of a single dose of eltrombopag 200 mg with boceprevir 800 mg every 8 hours did not alter plasma boceprevir AUC<sub>(0-τ)</sub>, but increased C<sub>max</sub> by 20%, and decreased C<sub>min</sub> by 32%. The clinical relevance of the decrease in C<sub>min</sub> has not been established, increased clinical and laboratory monitoring for HCV suppression is recommended.

### Effects of other medicinal products on eltrombopag

#### Ciclosporin

~~In vitro studies demonstrated that eltrombopag is a breast cancer resistance protein (BCRP) substrate and inhibitor.~~ A decrease in eltrombopag exposure was observed with co-administration of 200 mg and 600 mg ciclosporin (a BCRP inhibitor) ~~(see section 5.2).~~ The co-administration of 200 mg ciclosporin decreased the C<sub>max</sub> and the AUC<sub>inf</sub> of eltrombopag by 25% and 18%, respectively. The co-administration of 600 mg ciclosporin decreased the C<sub>max</sub> and the AUC<sub>inf</sub> of eltrombopag by 39% and 24%, respectively. -Eltrombopag dose adjustment is permitted during the course of the treatment based on the patient's platelet count (see section 4.2). Platelet count should be monitored at least weekly for 2 to 3 weeks when eltrombopag is co-administered with ciclosporin. Eltrombopag dose may need to be increased based on these platelet counts.

#### Polyvalent cations (chelation)

Eltrombopag chelates with polyvalent cations such as iron, calcium, magnesium, aluminium, selenium and zinc. Administration of a single dose of eltrombopag 75 mg with a polyvalent cation-containing antacid (1524 mg aluminium hydroxide and 1425 mg magnesium carbonate) decreased plasma eltrombopag AUC<sub>0-∞</sub> by 70% (90% CI: 64%, 76%) and C<sub>max</sub> by 70% (90% CI: 62%, 76%). Eltrombopag should be taken at least two hours before or four hours after any products such as antacids, dairy products or mineral supplements containing polyvalent cations to avoid significant reduction in eltrombopag absorption due to chelation (see sections 4.2 and 5.2).

#### Food interaction

~~The administration of eltrombopag tablet with a high calcium meal (e.g. a meal that included dairy products) significantly reduced plasma eltrombopag AUC<sub>0-∞</sub> and C<sub>max</sub>. In contrast, the administration of eltrombopag 2 hours before or 4 hours after a high calcium meal or with low calcium food [ $< 50$  mg calcium] did not alter plasma eltrombopag exposure to a clinically significant extent (see sections 4.2 and 5.2).~~

#### Lopinavir/ritonavir

Co-administration of eltrombopag with lopinavir/ritonavir ~~(LPV/RTV)~~ may cause a decrease in the concentration of eltrombopag. A study in 40 healthy volunteers showed that the co-administration of a

single 100 mg dose of eltrombopag ~~100 mg~~ with repeat dose lopinavir/ritonavir LPV/RTV 400/100 mg twice daily resulted in a reduction in eltrombopag plasma  $AUC_{inf(0-\infty)}$  by 17 % (90 % CI: 6.6 %, 26.6 %). Therefore, caution should be used when co-administration of eltrombopag with lopinavir/ritonavir LPV/RTV takes place. Platelet count should be closely monitored in order to ensure appropriate medical management of the dose of eltrombopag when lopinavir/ritonavir therapy is initiated or discontinued.

#### CYP1A2 and CYP2C8 inhibitors and inducers

Eltrombopag is ~~metabolized~~ metabolised through multiple pathways including CYP1A2, CYP2C8, UGT1A1, and UGT1A3 (see section 5.2). Medicinal products that inhibit or induce a single enzyme are unlikely to significantly affect plasma eltrombopag concentrations, whereas medicinal products that inhibit or induce multiple enzymes have the potential to increase (e.g. fluvoxamine) or decrease (e.g. rifampicin) eltrombopag concentrations.

#### HCV protease inhibitors

Results of a drug-drug pharmacokinetic (PK) interaction study show that co-administration of repeat doses of boceprevir 800 mg every 8 hours or telaprevir 750 mg every 8 hours with a single dose of eltrombopag 200 mg did not alter plasma eltrombopag exposure to a clinically significant extent.

#### Medicinal products for treatment of ITP

Medicinal products used in the treatment of ITP in combination with eltrombopag in clinical studies included corticosteroids, danazol, and/or azathioprine, intravenous immunoglobulin (IVIG), and anti-D immunoglobulin. Platelet counts should be monitored when combining eltrombopag with other medicinal products for the treatment of ITP in order to avoid platelet counts outside of the recommended range (see section 4.2).

#### Food interaction

The administration of eltrombopag tablet with a high-calcium meal (e.g. a meal that included dairy products) significantly reduced plasma eltrombopag  $AUC_{0-\infty}$  and  $C_{max}$ . In contrast, the administration of eltrombopag 2 hours before or 4 hours after a high-calcium meal or with low-calcium food [ $<50$  mg calcium] did not alter plasma eltrombopag exposure to a clinically significant extent (see section 4.2).

Administration of a single 50 mg dose of eltrombopag in tablet form with a standard high-calorie, high-fat breakfast that included dairy products reduced plasma eltrombopag mean  $AUC_{0-\infty}$  by 59% and mean  $C_{max}$  by 65%.

Food low in calcium ( $<50$  mg calcium), including fruit, lean ham, beef and unfortified (no added calcium, magnesium or iron) fruit juice, unfortified soya milk and unfortified grain, did not significantly impact plasma eltrombopag exposure, regardless of calorie and fat content (see sections 4.2 and 4.5).

## **4.6 Fertility, pregnancy and lactation**

### Pregnancy

There are no or limited amount of data from the use of eltrombopag in pregnant women. Studies in animals have shown reproductive toxicity (see section 5.3). The potential risk for humans is unknown.

Revolade is not recommended during pregnancy.



## Women of childbearing potential / Contraception in males and females

Revolade is not recommended in women of childbearing potential not using contraception.

### Breast-feeding

It is not known whether eltrombopag/metabolites are excreted in human milk. Studies in animals have shown that eltrombopag is likely secreted into milk (see section 5.3); therefore a risk to the suckling child cannot be excluded. A decision must be made whether to discontinue breast-feeding or to continue/abstain from Revolade therapy, taking into account the benefit of breast-feeding for the child and the benefit of therapy for the woman.

### Fertility

Fertility was not affected in male or female rats at exposures that were comparable to those in humans. However a risk for humans cannot be ruled out (see section 5.3).

## **4.7 Effects on ability to drive and use machines**

Eltrombopag has negligible influence on the ability to drive and use machines. The clinical status of the patient and the adverse reaction profile of eltrombopag, including dizziness and lack of alertness, should be borne in mind when considering the patient's ability to perform tasks that require judgement, motor and cognitive skills.

## **4.8 Undesirable effects**

### Summary of the safety profile

#### *Immune thrombocytopenia in adult and paediatric patients*

The safety of Revolade was assessed using the pooled double-blind, placebo-controlled studies TRA100773A and B, TRA102537 (RAISE) and TRA113765, in which 403 patients were exposed to Revolade and 179 to placebo, in addition to data from the completed open-label studies TRA108057, TRA105325 (EXTEND) and TRA112940. Patients received study medication for up to 8 years (in EXTEND). In 4 controlled and 2 uncontrolled clinical studies, 530 chronic adult ITP patients were treated with eltrombopag. The mean duration of exposure to eltrombopag was 260 days. The most important serious adverse reactions were hepatotoxicity and thrombotic/thromboembolic events. The most common adverse reactions occurring in at least 10% of patients included: headache, anaemia, decreased appetite, insomnia, cough, nausea, diarrhoea and increased alanine aminotransferase; alopecia, pruritus, myalgia, pyrexia, fatigue, influenza like illness, asthenia, chills and peripheral oedema.

The safety of Revolade in paediatric patients (aged 1 to 17 years) with previously treated ITP has been demonstrated in two studies. PETIT2 (TRA115450) was a 2-part, double-blind and open-label, randomised, placebo-controlled study. Patients were randomised 2:1 and received Revolade (n=63) or placebo (n=29) for up to 13 weeks in the randomised period of the study. PETIT (TRA108062) was a 3-part, staggered-cohort, open-label and double-blind, randomised, placebo-controlled study. Patients were randomised 2:1 and received Revolade (n=44) or placebo (n=21), for up to 7 weeks. In 2 controlled clinical studies, 171 chronic paediatric ITP patients were treated with eltrombopag. The median duration of exposure was 171 days. The profile of adverse reactions was comparable to that seen in adults with some additional adverse reactions, marked ♦ in the table below. The most common adverse reactions in paediatric ITP patients 1 year and older ( $\geq 3\%$  and greater than placebo) were upper respiratory tract infection, nasopharyngitis, cough, diarrhoea, pyrexia, rhinitis, abdominal pain, oropharyngeal pain, toothache, rash, increased AST and rhinorrhoea.

### Thrombocytopenia with HCV infection in adult patients

ENABLE 1 (TPL103922 n=716) and ENABLE 2 (TPL108390 n=805) were randomised, double-blind, placebo-controlled, multicentre studies to assess the efficacy and safety of Revolade in thrombocytopenic patients with HCV infection who were otherwise eligible to initiate antiviral therapy. In the HCV studies the safety population consisted of all randomised patients who received double-blind study medicinal product during Part 2 of ENABLE 1 (Revolade treatment n=450, placebo treatment n=232) and ENABLE 2 (Revolade treatment n=506, placebo treatment n=253). Patients are analysed according to the treatment received (total safety double-blind population, Revolade n=955 and placebo n=484). In 2 controlled clinical studies 955 thrombocytopenic patients with HCV infection were treated with eltrombopag. The median duration of exposure was 183 days. The most important serious adverse reactions identified were hepatotoxicity and thrombotic/thromboembolic events. The most common adverse reactions occurring in at least 10% of patients included: headache, anaemia, decreased appetite, ~~insomnia~~, cough, nausea, diarrhoea, **hyperbilirubinaemia**, alopecia, pruritus, myalgia, pyrexia, fatigue, influenza-like illness, asthenia, chills and ~~peripheral~~ oedema.

### Severe Aplastic Anaemia

#### First-line treatment of severe aplastic anaemia

The safety of eltrombopag was established based upon a single-arm trial of 153 patients with severe aplastic anaemia who had not received prior definitive immunosuppressive therapy. In this trial, eltrombopag was administered in combination with horse antithymocyte globulin (h-ATG) and cyclosporine [see section 5.1]. Among the 153 patients who were dosed in this trial, 92 patients were evaluable for safety of the concurrent use of eltrombopag, h-ATG, and cyclosporine at the recommended dose and schedule.

In this cohort, eltrombopag was administered at up to 150 mg once daily on Day 1 to Month 6 (D1-M6) in combination with h-ATG on Days 1 to 4 and cyclosporine for 6 months, followed by low dose of cyclosporine (maintenance dose) for an additional 18 months for patients who achieved a haematologic response at 6 months. The median duration of exposure to eltrombopag in this cohort was 183 days with 70% of patients exposed for > 24 weeks.

Table 8 presents the most common adverse reactions (experienced by greater than or equal to 5% of patients) associated with eltrombopag in the D1-M6 cohort.

**Table 8. Adverse Reactions (≥ 5%) From One Open-label Trial in First-Line Treatment of Patients With Severe Aplastic Anaemia**

<u>Adverse Reaction</u>	<u>Eltrombopag n = 92 (%)</u>
<u>ALT increased</u>	<u>29</u>
<u>AST increased</u>	<u>17</u>
<u>Blood bilirubin increased</u>	<u>17</u>
<u>Rash</u>	<u>8</u>
<u>Skin discoloration including hyperpigmentation</u>	<u>5</u>

In the eltrombopag D1-M6 cohort, ALT increased (29%), AST increased (17%), and blood bilirubin increased (17%) were reported more frequently than in patients with refractory severe aplastic anaemia.

New or worsening liver function laboratory abnormalities (CTCAE Grade 3 and Grade 4) in the eltrombopag D1-M6 cohort were 15% and 2% for AST, 26% and 4% for ALT, and 12% and 1% for bilirubin, respectively.

In this single-arm open-label clinical trial, ALT or AST > 3 x ULN with total bilirubin > 1.5 x ULN and ALT or AST > 3 x ULN with total bilirubin > 2 x ULN were reported in 44% and 32% of patients, respectively, in the eltrombopag D1-M6 cohort.

## Paediatric Patients

A total of 34 paediatric patients (2 patients 2 to 5 years of age, 12 patients 6 to 11 years of age, and 20 patients 12 to 16 years of age) were enrolled in this single-arm trial of which 26 paediatric patients were enrolled in the eltrombopag D1-M6 cohort. In this cohort, the most frequent serious adverse reactions (experienced by  $\geq 10\%$  of patients) were upper respiratory tract infection (12% in patients age 2 to 16 years compared to 5% in patients 17 years of age and older, respectively) and rash (12% compared to 2%). The most common adverse reactions (experienced by  $\geq 10\%$  of patients) associated with eltrombopag were ALT increased (23% in patients age 2 to 16 years compared to 32% in patients 17 years of age and older, respectively), blood bilirubin increased (12% compared to 20%), AST increased (12% compared to 20%), and rash (12% compared to 6%).

## Cytogenetic Abnormalities

In this trial, patients had bone marrow aspirates evaluated for cytogenetic abnormalities. Seven patients in the eltrombopag D1-M6 cohort had a new cytogenetic abnormality reported of which 4 had the loss of chromosome 7; these 4 occurred within 6.1 months. Across all cohorts, clonal cytogenetic evolution occurred in 15 out of 153 (10%) patients. Of the 15 patients who experienced a cytogenetic abnormality: 7 patients had the loss of chromosome 7, 6 of which occurred within 6.1 months; 4 patients had chromosomal aberrations which were of unclear significance; 3 patients had a deletion of chromosome 13; and 1 patient had a follow-up bone marrow assessment at 5 years with features of dysplasia with hypercellularity concerning for potential development of MDS. It is unclear whether these findings occurred due to the underlying disease, the immunosuppressive therapy, and/or treatment with eltrombopag.

## Refractory severe aplastic anaemia

The safety of eltrombopag in refractory severe aplastic anaemia was assessed in a single-arm, open-label study trial (N=43) in which 11 12 patients (26%) were treated for >6 months and 7 patients (16 %) were treated for >1 year. The most important serious adverse reactions were febrile neutropenia and sepsis/infection. The most common adverse reactions occurring in at least 10% of patients included: headache, dizziness, insomnia, cough, dyspnoea, oropharyngeal pain, rhinorrhoea, nausea, diarrhoea, abdominal pain, transaminases increased, ecchymosis, arthralgia, muscle spasms, pain in extremity, fatigue, febrile neutropenia, and pyrexia.

## List of adverse reactions

The adverse reactions in the adult ITP studies (N = 550 763), paediatric ITP studies (N=107 171), the HCV studies (N = 955 1,520), the definitive immunosuppressive therapy-naïve SAA study (N=92), the refractory SAA studies (N=43) and post-marketing reports are listed below by MedDRA system organ class and by frequency. Within each system organ class, the adverse drug reactions are ranked by frequency, with the most frequent reactions first. The corresponding frequency category for each adverse drug reaction is based on the following convention (CIOMS III): very common ( $\geq 1/10$ ); common ( $\geq 1/100$  to  $< 1/10$ ); uncommon ( $\geq 1/1,000$  to  $< 1/100$ ); rare ( $\geq 1/10,000$  to  $< 1/1,000$ ); not known (cannot be estimated from the available data).

Very common	(≥ 1/10)
Common	(≥ 1/100 to < 1/10)
Uncommon	(≥ 1/1,000 to < 1/100)
Rare	(≥ 1/10,000 to < 1/1,000)
Very rare	(< 1/10,000)
Not known	(cannot be estimated from the available data)

### ITP study population

System organ class	Frequency	Adverse reaction
<u>Infections and infestations</u>	<u>Very common</u>	<u>Nasopharyngitis<sup>†</sup>, upper respiratory tract infection<sup>†</sup></u>
	<u>Common</u>	<u>Pharyngitis, influenza, oral herpes, pneumonia, sinusitis, tonsillitis, respiratory tract infection, gingivitis</u>
	<u>Uncommon</u>	<u>Skin infection</u>
<u>Neoplasms benign, malignant and unspecified (incl cysts and polyps)</u>	<u>Uncommon</u>	<u>Rectosigmoid cancer</u>
<u>Blood and lymphatic system disorders</u>	<u>Common</u>	<u>Anaemia, eosinophilia, leukocytosis, thrombocytopenia, haemoglobin decreased, white blood cell count decreased</u>
	<u>Uncommon</u>	<u>Anisocytosis, haemolytic anaemia, myelocytosis, band neutrophil count increased, myelocyte present, platelet count increased, haemoglobin increased</u>
<u>Immune system disorders</u>	<u>Uncommon</u>	<u>Hypersensitivity</u>
<u>Metabolism and nutrition disorders</u>	<u>Common</u>	<u>Hypokalaemia, decreased appetite, blood uric acid increased</u>
	<u>Uncommon</u>	<u>Anorexia, gout, hypocalcaemia</u>
<u>Psychiatric disorders</u>	<u>Common</u>	<u>Sleep disorder, depression</u>
	<u>Uncommon</u>	<u>Apathy, mood altered, tearfulness</u>
<u>Nervous system disorders</u>	<u>Common</u>	<u>Paraesthesia, hypoaesthesia, somnolence, migraine</u>
	<u>Uncommon</u>	<u>Tremor, balance disorder, dysaesthesia, hemiparesis, migraine with aura, neuropathy peripheral, peripheral sensory neuropathy, speech disorder, toxic neuropathy, vascular headache</u>
<u>Eye disorders</u>	<u>Common</u>	<u>Dry eye, vision blurred, eye pain, visual acuity reduced</u>
	<u>Uncommon</u>	<u>Lenticular opacities, astigmatism, cataract cortical, lacrimation increased, retinal haemorrhage, retinal pigment epitheliopathy, visual impairment, visual acuity tests abnormal, blepharitis, keratoconjunctivitis sicca</u>
<u>Ear and labyrinth disorders</u>	<u>Common</u>	<u>Ear pain, vertigo</u>
<u>Cardiac disorders</u>	<u>Uncommon</u>	<u>Tachycardia, acute myocardial infarction, cardiovascular disorder, cyanosis, sinus tachycardia, electrocardiogram QT prolonged</u>
<u>Vascular disorders</u>	<u>Common</u>	<u>Deep vein thrombosis, haematoma, hot flush</u>
	<u>Uncommon</u>	<u>Embolism, thrombophlebitis superficial, flushing</u>
<u>Respiratory, thoracic and mediastinal disorders</u>	<u>Very common</u>	<u>Cough<sup>†</sup></u>
	<u>Common</u>	<u>Oropharyngeal pain<sup>†</sup>, rhinorrhoea<sup>†</sup></u>
	<u>Uncommon</u>	<u>Pulmonary embolism, pulmonary infarction, nasal discomfort, oropharyngeal blistering, sinus disorder, sleep apnoea syndrome</u>
<u>Gastrointestinal disorders</u>	<u>Very common</u>	<u>Nausea, diarrhoea<sup>†</sup></u>
	<u>Common</u>	<u>Mouth ulceration, toothache<sup>†</sup>, vomiting, abdominal pain*, mouth haemorrhage, flatulence</u> * Very common in paediatric ITP
	<u>Uncommon</u>	<u>Dry mouth, glossodynia, abdominal tenderness, faeces discoloured, food poisoning, frequent bowel movements, haematemesis, oral discomfort</u>

<u>Hepatobiliary disorders</u>	<u>Very common</u>	<u>Alanine aminotransferase increased<sup>†</sup></u>
	<u>Common</u>	<u>Aspartate aminotransferase increased<sup>†</sup>, hyperbilirubinaemia, hepatic function abnormal</u>
	<u>Uncommon</u>	<u>Cholestasis, hepatic lesion, hepatitis, drug-induced liver injury</u>
<u>Skin and subcutaneous tissue disorders</u>	<u>Common</u>	<u>Rash, alopecia, hyperhidrosis, pruritus generalised, petechiae</u>
	<u>Uncommon</u>	<u>Urticaria, dermatosis, cold sweat, erythema, melanosis, pigmentation disorder, skin discolouration, skin exfoliation</u>
<u>Musculoskeletal and connective tissue disorders</u>	<u>Common</u>	<u>Myalgia, muscle spasm, musculoskeletal pain, bone pain, back pain</u>
	<u>Uncommon</u>	<u>Muscular weakness</u>
<u>Renal and urinary disorders</u>	<u>Common</u>	<u>Proteinuria, blood creatinine increased, thrombotic microangiopathy with renal failure<sup>‡</sup></u>
	<u>Uncommon</u>	<u>Renal failure, leukocyturia, lupus nephritis, nocturia, blood urea increased, urine protein/creatinine ratio increased</u>
<u>Reproductive system and breast disorders</u>	<u>Common</u>	<u>Menorrhagia</u>
<u>General disorders and administration site conditions</u>	<u>Common</u>	<u>Pyrexia*, chest pain, asthenia *Very common in paediatric ITP</u>
	<u>Uncommon</u>	<u>Feeling hot, vessel puncture site haemorrhage, feeling jittery, inflammation of wound, malaise, sensation of foreign body</u>
<u>Investigations</u>	<u>Common</u>	<u>Blood alkaline phosphatase increased</u>
	<u>Uncommon</u>	<u>Blood albumin increased, protein total increased, blood albumin decreased, pH urine increased</u>
<u>Injury, poisoning and procedural complications</u>	<u>Uncommon</u>	<u>Sunburn</u>

\* Additional adverse reactions observed in paediatric studies (aged 1 to 17 years).

† Increase of alanine aminotransferase and aspartate aminotransferase may occur simultaneously, although at a lower frequency.

‡ Grouped term with preferred terms acute kidney injury and renal failure

### Infections and infestations

Very common ————— Nasopharyngitis<sup>†</sup>, upper respiratory tract infection<sup>†</sup>

Common ————— Rhinitis<sup>†</sup>

Uncommon ————— Pharyngitis, Urinary tract infection, Influenza, Oral herpes, Pneumonia, Sinusitis, Tonsillitis, Respiratory tract infection, Gingivitis, Skin infection

### Neoplasms benign, malignant and unspecified (incl cysts and polyps)

Uncommon ————— Rectosigmoid cancer

### Blood and lymphatic system disorders

Uncommon ————— Anaemia, Anisocytosis, Eosinophilia, Haemolytic anaemia, Leukocytosis, Myelocytosis, Thrombocytopenia, Haemoglobin increased, Band neutrophil count increased, Haemoglobin decreased, Myelocyte present, Platelet count increased, White blood cell count decreased

### Immune system disorders

Uncommon ————— Hypersensitivity

Metabolism and nutrition disorders

~~Uncommon~~ Anorexia, Hypokalaemia, Decreased appetite, Gout, Hypocalcaemia, Blood uric acid increased

Psychiatric disorders

~~Uncommon~~ Sleep disorder, Depression, Apathy, Mood altered, Tearfulness

Nervous system disorders

~~Common~~ Paraesthesia

~~Uncommon~~ Hypoaesthesia, Somnolence, Migraine, Tremor, Balance disorder, Dysaesthesia, Hemiparesis, Migraine with aura, Neuropathy peripheral, Peripheral sensory neuropathy, Speech disorder, Toxic neuropathy, Vascular headache

Eye disorders

~~Common~~ Dry eye

~~Uncommon~~ Vision blurred, Lenticular opacities, Astigmatism, Cataract cortical, Eye pain, Lacrimation increased, Retinal haemorrhage, Retinal pigment epitheliopathy, Visual acuity reduced, Visual impairment, Visual acuity tests abnormal, Blepharitis and Keratoconjunctivitis sicca

Ear and labyrinth disorders

~~Uncommon~~ Ear pain, Vertigo

Cardiac disorders

~~Uncommon~~ Tachycardia, Acute myocardial infarction, Cardiovascular disorder, Cyanosis, Sinus tachycardia, Electrocardiogram QT prolonged

Vascular disorders

~~Uncommon~~ Deep vein thrombosis, Embolism, Hot flush, Thrombophlebitis superficial, Flushing, Haematoma

Respiratory, thoracic and mediastinal disorders

~~Common~~ Cough\*, Oropharyngeal pain\*, Rhinorrhoea\*

~~Uncommon~~ Pulmonary embolism, Pulmonary infarction, Nasal discomfort, Oropharyngeal blistering, Oropharyngeal pain, Sinus disorder, Sleep apnoea syndrome

Gastrointestinal disorders

~~Common~~ Nausea, Diarrhoea\*, Mouth ulceration, Toothache\*

\* Very common in paediatric ITP

~~Uncommon~~ Dry mouth, Vomiting, Abdominal pain, Glossodynia, Mouth haemorrhage, Abdominal tenderness, Faeces discoloured, Flatulence, Food poisoning, Frequent bowel movements, Haematemesis, Oral discomfort

### Hepatobiliary disorders

*Common* ————— Alanine aminotransferase increased\*, Aspartate aminotransferase increased\*, Hyperbilirubinaemia, Hepatic function abnormal

*Uncommon* ————— Cholestasis, Hepatic lesion, Hepatitis, Drug-induced liver injury

\*Increase of alanine aminotransferase and aspartate aminotransferase may occur simultaneously, although at a lower frequency.

### Skin and subcutaneous tissue disorders

*Common* ————— Rash, Alopecia

*Uncommon* ————— Hyperhidrosis, Pruritus generalised, Urticaria, Dermatitis, Petechiae, Cold sweat, Erythema, Melanosis, Pigmentation disorder, Skin discolouration, Skin exfoliation

### Musculoskeletal and connective tissue disorders

*Common* ————— Myalgia, Muscle spasm, Musculoskeletal pain, Bone pain, Back pain

*Uncommon* ————— Muscular weakness

### Renal and urinary disorders

*Uncommon* ————— Renal failure, Leukocyturia, Lupus nephritis, Nocturia, Proteinuria, Blood urea increased, Blood creatinine increased, Urine protein/creatinine ratio increased

### Reproductive system and breast disorders

*Common* ————— Menorrhagia

### General disorders and administration site conditions

*Uncommon* ————— Chest pain, Feeling hot, Vessel puncture site haemorrhage, Asthenia, Feeling jittery, Inflammation of wound, Malaise, Pyrexia \*, Sensation of foreign body

\* Common in paediatric ITP

### Investigations

*Uncommon* ————— Blood albumin increased, Blood alkaline phosphatase increased, Protein total increased, Blood albumin decreased, pH urine increased

### Injury, poisoning and procedural complications

*Uncommon* ————— Sunburn

† Additional adverse reactions observed in paediatric studies (aged 1 to 17 years).

## **HCV study population (in combination with anti-viral interferon and ribavirin therapy)**

<u>System organ class</u>	<u>Frequency</u>	<u>Adverse reaction</u>
<u>Infections and infestations</u>	<u>Common</u>	<u>Urinary tract infection, upper respiratory tract infection, bronchitis, nasopharyngitis, influenza, oral herpes</u>
	<u>Uncommon</u>	<u>Gastroenteritis, pharyngitis</u>
<u>Neoplasms benign, malignant and unspecified (incl cysts and polyps)</u>	<u>Common</u>	<u>Hepatic neoplasm malignant</u>
<u>Blood and lymphatic system disorders</u>	<u>Very common</u>	<u>Anaemia</u>
	<u>Common</u>	<u>Lymphopenia</u>
	<u>Uncommon</u>	<u>Haemolytic anaemia</u>
<u>Metabolism and nutrition disorders</u>	<u>Very common</u>	<u>Decreased appetite</u>
	<u>Common</u>	<u>Hyperglycaemia, abnormal loss of weight</u>
<u>Psychiatric disorders</u>	<u>Common</u>	<u>Depression, anxiety, sleep disorder</u>
	<u>Uncommon</u>	<u>Confusional state, agitation</u>
<u>Nervous system disorders</u>	<u>Very common</u>	<u>Headache</u>
	<u>Common</u>	<u>Dizziness, disturbance in attention, dysgeusia, hepatic encephalopathy, lethargy, memory impairment, paraesthesia</u>
<u>Eye disorders</u>	<u>Common</u>	<u>Cataract, retinal exudates, dry eye, ocular icterus, retinal haemorrhage</u>
<u>Ear and labyrinth disorders</u>	<u>Common</u>	<u>Vertigo</u>
<u>Cardiac disorders</u>	<u>Common</u>	<u>Palpitations</u>
<u>Respiratory, thoracic and mediastinal disorders</u>	<u>Very common</u>	<u>Cough</u>
	<u>Common</u>	<u>Dyspnoea, oropharyngeal pain, dyspnoea exertional, productive cough</u>
<u>Gastrointestinal disorders</u>	<u>Very common</u>	<u>Nausea, diarrhoea</u>
	<u>Common</u>	<u>Vomiting, ascites, abdominal pain, abdominal pain upper, dyspepsia, dry mouth, constipation, abdominal distension, toothache, stomatitis, gastrooesophageal reflux disease, haemorrhoids, abdominal discomfort, varices oesophageal</u>
	<u>Uncommon</u>	<u>Oesophageal varices haemorrhage, gastritis, aphthous stomatitis</u>
<u>Hepatobiliary disorders</u>	<u>Common</u>	<u>Hyperbilirubinaemia, jaundice, drug-induced liver injury</u>
	<u>Uncommon</u>	<u>Portal vein thrombosis, hepatic failure</u>



<u>Skin and subcutaneous tissue disorders</u>	<u>Very common</u>	<u>Pruritus</u>
	<u>Common</u>	<u>Rash, dry skin, eczema, rash pruritic, erythema, hyperhidrosis, pruritus generalised, alopecia</u>
	<u>Uncommon</u>	<u>Skin lesion, skin discolouration, skin hyperpigmentation, night sweats</u>
<u>Musculoskeletal and connective tissue disorder</u>	<u>Very common</u>	<u>Myalgia</u>
	<u>Common</u>	<u>Arthralgia, muscle spasms, back pain, pain in extremity, musculoskeletal pain, bone pain</u>
<u>Renal and urinary disorders</u>	<u>Uncommon</u>	<u>Thrombotic microangiopathy with acute renal failure<sup>†</sup>, dysuria</u>
<u>General disorders and administration site conditions</u>	<u>Very common</u>	<u>Pyrexia, fatigue, influenza-like illness, asthenia, chills</u>
	<u>Common</u>	<u>Irritability, pain, malaise, injection site reaction, non-cardiac chest pain, oedema, oedema peripheral</u>
	<u>Uncommon</u>	<u>Injection site pruritus, injection site rash, chest discomfort</u>
<u>Investigations</u>	<u>Common</u>	<u>Blood bilirubin increased, weight decreased, white blood cell count decreased, haemoglobin decreased, neutrophil count decreased, international normalised ratio increased, activated partial thromboplastin time prolonged, blood glucose increased, blood albumin decreased</u>
	<u>Uncommon</u>	<u>Electrocardiogram QT prolonged</u>

<sup>†</sup> Grouped term with preferred terms oliguria, renal failure and renal impairment

#### Infections and infestations

Common ————— Urinary tract infection, Upper respiratory tract infection, Bronchitis, Nasopharyngitis, Influenza, Oral herpes, Gastroenteritis, Pharyngitis

#### Neoplasms benign, malignant and unspecified (incl cysts and polyps)

Common ————— Hepatic neoplasm malignant

#### Blood and lymphatic system disorders

Very common ————— Anaemia

Common ————— Lymphopenia, Haemolytic anaemia

#### Metabolism and nutrition disorders

Very common ————— Decreased appetite

Common ————— Hyperglycaemia, Abnormal loss of weight

#### Psychiatric disorders

Very common ————— Insomnia

Common ————— Depression, Anxiety, Sleep disorder, Confusional state, Agitation

#### Nervous system disorders

Very common ————— Headache

Common ————— Dizziness, Disturbance in attention, Dysgeusia, Hepatic encephalopathy, Lethargy, Memory impairment, Paraesthesia

#### Eye disorders

~~Common~~ Cataract, Retinal exudates, Dry Eye, Ocular icterus, Retinal haemorrhage

#### Ear and labyrinth disorders

~~Common~~ Vertigo

#### Cardiac disorders

~~Common~~ Palpitations

#### Respiratory, thoracic and mediastinal disorders

~~Very common~~ Cough

~~Common~~ Dyspnoea, Oropharyngeal pain, Dyspnoea exertional, Productive cough

#### Gastrointestinal disorders

~~Very common~~ Nausea, Diarrhoea

~~Common~~ Vomiting, Ascites, Abdominal pain, Abdominal pain upper, Dyspepsia, Dry mouth, Constipation, Abdominal distension, Toothache, Stomatitis, Gastrooesophageal reflux disease, Haemorrhoids, Abdominal discomfort, Gastritis, Varices oesophageal, Aphthous stomatitis, Oesophageal varices haemorrhage

#### Hepatobiliary disorders

~~Common~~ Hyperbilirubinaemia, Jaundice, Portal vein thrombosis, Hepatic failure, Drug-induced liver injury

#### Skin and subcutaneous tissue disorders

~~Very common~~ Pruritus, Alopecia

~~Common~~ Rash, Dry skin, Eczema, Rash pruritic, Erythema, Hyperhidrosis, Pruritus generalised, Night sweats, Skin lesion

~~Not known~~ Skin discolouration, Skin hyperpigmentation

#### Musculoskeletal and connective tissue disorder

~~Very common~~ Myalgia

~~Common~~ Arthralgia, Muscle spasms, Back pain, Pain in extremity, Musculoskeletal pain, Bone pain

#### Renal and urinary disorders

~~Uncommon~~ Dysuria

#### General disorders and administration site conditions

~~Very common~~ Pyrexia, Fatigue, Influenza like illness, Asthenia, Chills, Oedema peripheral

~~Common~~ Irritability, Pain, Malaise, Injection site reaction, Non-cardiac chest pain, Oedema, Injection site rash, Chest discomfort, Injection site pruritus

#### Investigations

~~Common~~ Blood bilirubin increased, Weight decreased, White blood cell count decreased, Haemoglobin decreased, Neutrophil count decreased, International normalised ratio

increased, Activated partial thromboplastin time prolonged, Blood glucose increased, Blood albumin decreased, Electrocardiogram QT prolonged

**Adverse Reactions ( $\geq 5\%$ ) From One Open-label Trial in First-line Treatment of Patients With Severe Aplastic Anemia**

<b>Adverse Reaction</b>	<b>Revolade N=92 (%)</b>
<b>ALT increased</b>	<b>29</b>
<b>AST increased</b>	<b>17</b>
<b>Blood bilirubin increased</b>	<b>17</b>
<b>Rash</b>	<b>8</b>
<b>Skin discoloration including hyperpigmentation</b>	<b>5</b>

**Refractory SAA study population**

<b>System organ class</b>	<b>Frequency</b>	<b>Adverse reaction</b>
<u>Blood and lymphatic system disorders</u>	<u>Common</u>	<u>Neutropenia, splenic infarction</u>
<u>Metabolism and nutrition disorders</u>	<u>Common</u>	<u>Iron overload, decreased appetite, hypoglycaemia, increased appetite</u>
<u>Psychiatric disorders</u>	<u>Common</u>	<u>Anxiety, depression</u>
<u>Nervous system disorders</u>	<u>Very common</u>	<u>Headache, dizziness</u>
	<u>Common</u>	<u>Syncope</u>
<u>Eye disorders</u>	<u>Common</u>	<u>Dry eye, cataract, ocular icterus, vision blurred, visual impairment, vitreous floaters</u>
<u>Respiratory, thoracic and mediastinal disorders</u>	<u>Very common</u>	<u>Cough, oropharyngeal pain, rhinorrhoea</u>
	<u>Common</u>	<u>Epistaxis</u>

<u>Gastrointestinal disorders</u>	<u>Very common</u>	<u>Diarrhoea, nausea, gingival bleeding, abdominal pain</u>
	<u>Common</u>	<u>Oral mucosal blistering, oral pain, vomiting, abdominal discomfort, constipation, abdominal distension, dysphagia, faeces discoloured, swollen tongue, gastrointestinal motility disorder, flatulence</u>
<u>Hepatobiliary disorders</u>	<u>Very common</u>	<u>Transaminases increased</u>
	<u>Common</u>	<u>Blood bilirubin increased (hyperbilirubinemia), jaundice</u>
	<u>Not known</u>	<u>Drug-induced liver injury*</u> <u>* Cases of drug-induced liver injury have been reported in patients with ITP and HCV</u>
<u>Skin and subcutaneous tissue disorders</u>	<u>Common</u>	<u>Petechiae, rash, pruritus, urticaria, skin lesion, rash macular</u>
	<u>Not known</u>	<u>Skin discolouration, skin hyperpigmentation</u>
<u>Musculoskeletal and connective tissue disorders</u>	<u>Very common</u>	<u>Arthralgia, pain in extremity, muscle spasms</u>
	<u>Common</u>	<u>Back pain, myalgia, bone pain</u>
<u>Renal and urinary disorders</u>	<u>Common</u>	<u>Chromaturia</u>
<u>General disorders and administration site conditions</u>	<u>Very common</u>	<u>Fatigue, pyrexia, chills</u>
	<u>Common</u>	<u>Asthenia, oedema peripheral, malaise</u>
<u>Investigations</u>	<u>Common</u>	<u>Blood creatine phosphokinase increased</u>

Blood and lymphatic system disorders

Common ————— Neutropenia, Splenic infarction

Metabolism and nutrition disorders

Common ————— Iron overload, Decreased appetite, Hypoglycaemia, Increased appetite

Psychiatric disorders

Very common ————— Insomnia

Common ————— Anxiety, Depression

Nervous system disorders

Very common ————— Headache, Dizziness

Common ————— Syncope

Eye disorders

Common ————— Dry eye, Eye pruritus, Cataract, Ocular icterus, Vision blurred, Visual impairment, Vitreous floaters

Respiratory, thoracic and mediastinal disorders

Very common ————— Cough, Dyspnoea, Oropharyngeal Pain, Rhinorrhoea

Common ————— Epistaxis

### Gastrointestinal disorders

*Very common* — Abdominal pain, Diarrhoea, Nausea

*Common* — Gingival bleeding, Oral mucosal blistering, Oral pain, Vomiting, Abdominal discomfort, Constipation, Abdominal distension, Dysphagia, Faeces discoloured, Swollen tongue, Gastrointestinal motility disorder, Flatulence

### Hepatobiliary disorders

*Very common* — Transaminases increased

*Common* — Blood bilirubin increased (hyperbilirubinemia), Jaundice

*Not known* — Drug induced liver injury\*

\* Cases of Drug induced liver injury have been reported in patients with ITP and HCV

### Skin and subcutaneous tissue disorders

*Very common* — Ecchymosis

*Common* — Petechiae, Rash, Pruritus, Urticaria, Skin lesion, Rash Macular

*Not known* — Skin discolouration, Skin hyperpigmentation

### Musculoskeletal and connective tissue disorders

*Very common* — Arthralgia, Muscle spasms, Pain in extremity

*Common* — Back pain, Myalgia, Bone pain

### Renal and urinary disorders

*Common* — Chromaturia

### General disorders and administration site conditions

*Very common* — Fatigue, Febrile neutropenia, Pyrexia

*Common* — Asthenia, Oedema peripheral, Chills, Malaise

### Investigations

*Common* — Blood creatine phosphokinase increased

### Description of selected adverse reactions

#### Thrombotic/~~t~~Thromboembolic events (TEEs)

In 3 controlled and 2 uncontrolled clinical studies, among adult **chronic**-ITP patients receiving eltrombopag (n = 446), 17 **subjects/patients** experienced a total of 19 TEEs, which included (in

descending order of occurrence) deep vein thrombosis (n = 6), pulmonary embolism (n = 6), acute myocardial infarction (n = 2), cerebral infarction (n = 2), embolism (n = 1) (see section 4.4).

In a placebo-controlled study (n = 288, Safety population), following 2 weeks' treatment in preparation for invasive procedures, 6 of 143 (4%) adult patients with chronic liver disease receiving eltrombopag experienced 7 TEEs of the portal venous system and 2 of 145 (1%) subjectspatients in the placebo group experienced 3 TEEs. Five of the 6 patients treated with eltrombopag experienced the TEE at a platelet count  $>200,000/\mu\text{l}$

No specific risk factors were identified in those subjectspatients who experienced a TEE with the exception of platelet counts  $\geq 200,000/\mu\text{l}$  (see section 4.4).

In controlled studies in thrombocytopenic patients with HCV (n = 1,439), 38 out of 955 subjectspatients (4%) treated with eltrombopag experienced a TEE and 6 out of 484 subjectspatients (1%) in the placebo group experienced TEEs. Portal vein thrombosis was the most common TEE in both treatment groups (2% in patients treated with eltrombopag versus  $< 1\%$  for placebo) (see section 4.4). Patients with low albumin levels ( $\leq 35 \text{ g/L}$ ) or MELD  $\geq 10$  had a ~~twofold~~ 2-fold greater risk of TEEs than those with higher albumin levels; those aged  $\geq 60$  years had a 2-fold greater risk of TEEs compared to younger patients.

#### Hepatic decompensation (use with interferon)

Chronic HCV patients with cirrhosis may be at risk of hepatic decompensation when receiving alfa interferon therapy. In 2 controlled clinical studies in thrombocytopenic patients with HCV, hepatic decompensation (ascites, hepatic encephalopathy, variceal haemorrhage, spontaneous bacterial peritonitis) was reported more frequently in the eltrombopag arm (11%) than in the placebo arm (6%). In patients with low albumin levels ( $\leq 35 \text{ g/L}$ ) or MELD score  $\geq 10$  at baseline, there was a ~~three~~ 3-fold greater risk of hepatic decompensation and an increase in the risk of a fatal adverse event compared to those with less advanced liver disease. Eltrombopag should only be administered to such patients after careful consideration of the expected benefits in comparison with the risks. Patients with these characteristics should be closely monitored for signs and symptoms of hepatic decompensation (see section 4.4).

#### Hepatotoxicity

In the controlled clinical studies in chronic ITP with eltrombopag, increases in serum ALT, AST and bilirubin were observed (see section 4.4).

These findings were mostly mild (Grade 1-2), reversible and not accompanied by clinically significant symptoms that would indicate an impaired liver function. Across the 3 placebo-controlled studies in adults with chronic ITP, 1 patient in the placebo group and 1 patient in the eltrombopag group experienced a Grade 4 liver test abnormality. In two placebo-controlled studies in paediatric patients (aged 1 to 17 years) with chronic ITP, ALT  $\geq 3 \times \text{ULN}$  was reported in 4.7% and 0% of the eltrombopag and placebo groups, respectively.

In 2 controlled clinical studies in patients with HCV, ALT or AST  $\geq 3 \times \text{ULN}$  was reported in 34% and 38% of the eltrombopag and placebo groups, respectively. Most patients receiving eltrombopag in combination with peginterferon / ribavirin therapy will experience indirect hyperbilirubinaemia. Overall, total bilirubin  $\geq 1.5 \times \text{ULN}$  was reported in 76% and 50% of the eltrombopag and placebo groups, respectively.

In the single-arm phase II monotherapy refractory SAA study, concurrent ALT or AST  $> 3 \times \text{ULN}$  with total (indirect) bilirubin  $> 1.5 \times \text{ULN}$  were reported in 5% of patients. Total bilirubin  $> 1.5 \times \text{ULN}$  occurred in 14% of patients.

### Thrombocytopenia following discontinuation of treatment

In the 3 controlled clinical ITP studies, transient decreases in platelet counts to levels lower than baseline were observed following discontinuation of treatment in 8 % and 8 % of the eltrombopag and placebo groups, respectively (see section 4.4).

### Increased bone marrow reticulin

Across the programme, no patients had evidence of clinically relevant bone marrow abnormalities or clinical findings that would indicate bone marrow dysfunction. In a small number of ITP patients, eltrombopag treatment was discontinued due to bone marrow reticulin (see section 4.4).

### Cytogenetic abnormalities

In the phase II refractory SAA clinical study with eltrombopag with a starting dose of 50 mg/day (escalated every 2 weeks to a maximum of 150 mg/day) (ELT112523), the incidence of new cytogenetic abnormalities was observed in 17.1% of adult patients [7/41 (where 4 of them had changes in chromosome 7)]. The median time on study to a cytogenetic abnormality was 2.9 months.

In the phase II refractory SAA clinical study with eltrombopag at a dose of 150 mg/day (with ethnic or age related modifications as indicated) (ELT116826), the incidence of new cytogenetic abnormalities was observed in 22.6% of adult patients [7/31 (where 3 of them had changes in chromosome 7)]. All 7 patients had normal cytogenetics at baseline. Six patients had cytogenetic abnormality at Month 3 of eltrombopag therapy and one patient had cytogenetic abnormality at Month 6.

~~In the single arm, open label trial in SAA, patients had bone marrow aspirates evaluated for cytogenetic abnormalities. Eight (19%) patients had a new cytogenetic abnormality reported, including 5 patients who had changes in chromosome 7. In the two ongoing studies (ELT116826 and ELT116643), cytogenetic abnormalities have been detected in 4/28 (14%) and 4/62 (6%) subjects in each study.~~

### Haematologic malignancies

In the single-arm, open-label ~~study~~trial in SAA, three (7%) patients were diagnosed with MDS following treatment with eltrombopag, in the two ongoing studies (ELT116826 and ELT116643), 1/28 (4%) and 1/62 (2%) ~~patients~~subject has been diagnosed with MDS or AML in each study.

### Reporting of suspected adverse reactions

Reporting suspected adverse reactions after authorisation of the medicinal product is important. It allows continued monitoring of the benefit/risk balance of the medicinal product. Any suspected adverse events should be reported to the Ministry of Health according to the National Regulation by using an online form

(<https://sideeffects.health.gov.il/http://forms.gov.il/globaldata/getsequence/getsequence.aspx?formType=AdversEffectMedic@moh.gov.il>).

## **4.9 Overdose**

In the event of overdose, platelet counts may increase excessively and result in thrombotic/thromboembolic complications. In case of an overdose, consideration should be given to oral administration of a metal cation-containing preparation, such as calcium, aluminium, or magnesium preparations to chelate eltrombopag and thus limit absorption. Platelet counts should be closely monitored. Treatment with eltrombopag should be reinitiated in accordance with dosing and administration recommendations (see section 4.2).

In the clinical studies there was one report of overdose where the ~~patients~~subject ingested 5,000 mg of eltrombopag. Reported adverse reactions included mild rash, transient bradycardia, ALT and AST

elevation, and fatigue. Liver enzymes measured between Days 2 and 18 after ingestion peaked at a 1.6-fold ULN in AST, a 3.9-fold ULN in ALT, and a 2.4-fold ULN in total bilirubin, the platelet counts were 672,000/ $\mu$ l on ~~day~~ Day 18 after ingestion and the maximum platelet count was 929,000/ $\mu$ l. All events were resolved without sequelae following treatment.

Because eltrombopag is not significantly renally excreted and is highly bound to plasma proteins, haemodialysis would not be expected to be an effective method to enhance the elimination of eltrombopag.

## 5. PHARMACOLOGICAL PROPERTIES

### 5.1 Pharmacodynamic properties

Pharmacotherapeutic group: Antihemorrhagics, other systemic hemostatics. ATC code: B02BX 05.

#### Mechanism of action

TPO is the main cytokine involved in regulation of megakaryopoiesis and platelet production, and is the endogenous ligand for the TPO-R. Eltrombopag interacts with the transmembrane domain of the human TPO-R and initiates signalling cascades similar but not identical to that of endogenous thrombopoietin (TPO), inducing proliferation and differentiation from bone marrow progenitor cells.

#### Clinical efficacy and safety

##### *Chronic immune (idiopathic/primary) thrombocytopenia (ITP) studies*

Two Phase III, randomised, double-blind, placebo-controlled studies RAISE (TRA102537) and TRA100773B and two open-label studies REPEAT (TRA108057) and EXTEND (TRA105325) evaluated the safety and efficacy of eltrombopag in adult patients with previously treated chronic ITP. Overall, eltrombopag was administered to 277 ITP patients for at least 6 months and 202 patients for at least 1 year.

##### *Double-blind placebo-controlled studies*

RAISE: 197 ITP patients were randomised 2:1, eltrombopag (n=135) to placebo (n=62), and randomisation was stratified based upon splenectomy status, use of ITP medicinal products at baseline and baseline platelet count. The dose of eltrombopag was adjusted during the 6 month treatment period based on individual platelet counts. All patients initiated treatment with eltrombopag 50 mg. From Day 29 to the end of treatment, 15 to 28% of eltrombopag-treated patients were maintained on  $\leq$ 25 mg and 29 to 53% received 75 mg.

In addition, patients could taper off concomitant ITP medicinal products and receive rescue treatments as dictated by local standard of care. More than half of all patients in each treatment group had  $\geq$ 3 prior ITP therapies and 36% had a prior splenectomy.

Median platelet counts at baseline were 16,000/ $\mu$ l for both treatment groups and in the eltrombopag group were maintained above 50,000/ $\mu$ l at all on-therapy visits starting at Day 15; in contrast, median platelet counts in the placebo group remained  $<$ 30,000/ $\mu$ l throughout the study.

Platelet count response between 50,000-400,000/ $\mu$ l in the absence of rescue treatment was achieved by significantly more patients in the eltrombopag treated group during the 6 month treatment period,  $p < 0.001$ . Fifty-four percent of the eltrombopag-treated patients and 13 % of placebo-treated patients achieved this level of response after 6 weeks of treatment. A similar platelet response was maintained throughout the study, with 52 % and 16 % of patients responding at the end of the 6-month treatment period.



**Table 49: Secondary efficacy results from RAISE**

	Eltrombopag N = 135	Placebo N = 62
<b>Key secondary endpoints</b>		
Number of cumulative weeks with platelet counts $\geq$ 50,000-400,000/ $\mu$ l, Mean (SD)	11.3 (9.46)	2.4 (5.95)
Patients with $\geq$ 75 % of assessments in the target range (50,000 to 400,000/ $\mu$ l), n (%)	51 (38)	4 (7)
<i>p</i> -value <sup>a</sup>	< 0.001	
Patients with bleeding (WHO Grades 1-4) at any time during 6 months, n (%)	106 (79)	56 (93)
<i>p</i> -value <sup>a</sup>	0.012	
Patients with bleeding (WHO Grades 2-4) at any time during 6 months, n (%)	44 (33)	32 (53)
<i>p</i> -value <sup>a</sup>	0.002	
Requiring rescue therapy, n (%)	24 (18)	25 (40)
<i>p</i> -value <sup>a</sup>	0.001	
Patients receiving ITP therapy at baseline (n)	63	31
Patients who attempted to reduce or discontinue baseline therapy, n (%) <sup>b</sup>	37 (59)	10 (32)
<i>p</i> -value <sup>a</sup>	0.016	

a Logistic regression model adjusted for randomisation stratification variables

b 21 out of 63 (33 %) patients treated with eltrombopag who were taking an ITP medicinal product at baseline permanently discontinued all baseline ITP medicinal products.

At baseline, more than 70 % of ITP patients in each treatment group reported any bleeding (WHO Grades 1-4) and more than 20 % reported clinically significant bleeding (WHO Grades 2-4), respectively. The proportion of eltrombopag-treated patients with any bleeding (Grades 1-4) and clinically significant bleeding (Grades 2-4) was reduced from baseline by approximately 50 % from Day 15 to the end of treatment throughout the 6-month treatment period.

TRA100773B: The primary efficacy endpoint was the proportion of responders, defined as ITP patients who had an increase in platelet counts to  $\geq$  50,000/ $\mu$ l at Day 43 from a baseline of  $<$ 30,000/ $\mu$ l; patients who withdrew prematurely due to a platelet count  $>$ 200,000/ $\mu$ l were considered responders, those that discontinued for any other reason were considered non-responders irrespective of platelet count. A total of 114 patients with previously treated **chronic** ITP were randomised 2:1 eltrombopag (n = 76) to placebo (n = 38).

**Table 5 10: Efficacy results from TRA100773B**

	Eltrombopag N = 74	Placebo N = 38
Key primary endpoints		
Eligible for efficacy analysis, n	73	37
Patients with platelet count $\geq 50,000/\mu\text{l}$ after up to 42 days of dosing (compared to a baseline count of $< 30,000/\mu\text{l}$ ), n (%)	43 (59)	6 (16)
$p$ -value <sup>a</sup>	< 0.001	
Key secondary endpoints		
Patients with a Day 43 bleeding assessment, n	51	30
Bleeding (WHO Grades 1-4) n (%)	20 (39)	18 (60)
$p$ -value <sup>a</sup>	0.029	

a ———— Logistic regression model adjusted for randomisation stratification variables

In both RAISE and TRA100773B the response to eltrombopag relative to placebo was similar irrespective of ITP medicinal product use, splenectomy status and baseline platelet count ( $\leq 15,000/\mu\text{l}$ ,  $>15,000/\mu\text{l}$ ) at randomisation.

In RAISE and TRA100773B studies, in the subgroup of ITP patients with baseline platelet count  $\leq 15,000/\mu\text{l}$  the median platelet counts did not reach the target level ( $>50,000/\mu\text{l}$ ), although in both studies 43 % of these patients treated with eltrombopag responded after 6 weeks of treatment. In addition, in the RAISE study, 42 % of patients with baseline platelet count  $\leq 15,000/\mu\text{l}$  treated with eltrombopag responded at the end of the 6 month treatment period. Forty-two to 60 % of the eltrombopag-treated patients in the RAISE study were receiving 75 mg from Day 29 to the end of treatment.

An open-label, repeat-dose study (3 cycles of 6 weeks of treatment, followed by 4 weeks off treatment) showed that episodic use with multiple courses of eltrombopag has demonstrated no loss of response.

Eltrombopag was administered to 302 ITP patients in the open-label extension study EXTEND (TRA105325), 218 patients completed 1 year, 180 completed 2 years, 107 completed 3 years, 75 completed 4 years, 34 completed 5 years and 18 completed 6 years. The median baseline platelet count was  $19,000/\mu\text{l}$  prior to eltrombopag administration. Median platelet counts at 1, 2, 3, 4, 5, 6 and 7 years on study were  $85,000/\mu\text{l}$ ,  $85,000/\mu\text{l}$ ,  $105,000/\mu\text{l}$ ,  $64,000/\mu\text{l}$ ,  $75,000/\mu\text{l}$ ,  $119,000/\mu\text{l}$  and  $76,000/\mu\text{l}$  respectively.

Clinical studies comparing eltrombopag to other treatment options (e.g. splenectomy) have not been conducted. The long-term safety of eltrombopag should be considered prior to starting therapy.

#### Paediatric population (aged 1 to 17 years)

The safety and efficacy of eltrombopag in paediatric subjects/patients has been investigated in two studies.

*TRA115450 (PETIT2)*: The primary endpoint was a sustained response, defined as the proportion of subjects/patients receiving eltrombopag, compared to placebo, achieving platelet counts  $\geq 50,000/\mu\text{l}$  for at least 6 out of 8 weeks (in the absence of rescue therapy), between weeks 5 to 12 during the double-blind randomised period. Subjects/Patients were diagnosed with chronic ITP for at least 1 year and were refractory or relapsed to at least one prior ITP therapy or unable to continue other ITP treatments for a medical reason and had platelet count  $< 30,000/\mu\text{l}$ . Ninety-two subjects/patients were randomised

by three age cohort strata (2:1) to eltrombopag (n=63) or placebo (n=29). The dose of eltrombopag could be adjusted based on individual platelet counts.

Overall, a significantly greater proportion of eltrombopag [subjects/patients](#) (40%) compared with placebo [subjects/patients](#) (3%) achieved the primary endpoint (Odds Ratio: 18.0 [95% CI: 2.3, 140.9] p < 0.001) which was similar across the three age cohorts (Table [611](#)).

**Table [611](#) – Sustained platelet response rates by age cohort in paediatric [subjects/patients](#) with chronic ITP**

	Eltrombopag n/N (%) [95% CI]	Placebo n/N (%) [95% CI]
Cohort 1 (12 to 17 years)	9/23 (39%) [20%, 61%]	1/10 (10%) [0%, 45%]
Cohort 2 (6 to 11 years)	11/26 (42%) [23%, 63%]	0/13 (0%) [N/A]
Cohort 3 (1 to 5 years)	5/14 (36%) [13%, 65%]	0/6 (0%) [N/A]

Statistically fewer eltrombopag [subjects/patients](#) required rescue treatment during the randomised period compared to placebo [subjects/patients](#) (19% [12/63] vs. 24% [7/29], p=0.032).

At baseline, 71% of [subjects/patients](#) in the eltrombopag group and 69% in the placebo group reported any bleeding (WHO Grades 1-4). At Week 12, the proportion of eltrombopag [subjects/patients](#) reporting any bleeding was decreased to half of baseline (36%). In comparison, at Week 12, 55% of placebo [subjects/patients](#) reported any bleeding.

[Subjects/Patients](#) were permitted to reduce or discontinue baseline ITP therapy only during the open-label phase of the study and 53% (8/15) of [subjects/patients](#) were able to reduce (n=1) or discontinue (n=7) baseline ITP therapy, mainly corticosteroids, without needing rescue therapy.

*TRA108062 (PETIT)*: The primary endpoint was the proportion of [subjects/patients](#) achieving platelet counts  $\geq 50,000/\mu\text{l}$  at least once between weeks 1 and 6 of the randomised period. [Subjects/Patients were diagnosed with ITP for at least 6 months and](#) were refractory or relapsed to at least one prior ITP therapy with a platelet count  $< 30,000/\mu\text{l}$  (n=67). During the randomised period of the study, [subjects/patients](#) were randomised by ~~3~~-three age cohort strata (2:1) to eltrombopag (n=45) or placebo (n=22). The dose of eltrombopag could be adjusted based on individual platelet counts.

Overall, a significantly greater proportion of eltrombopag [subjects/patients](#) (62%) compared with placebo [subjects/patients](#) (32%) met the primary endpoint (Odds Ratio: 4.3 [95% CI: 1.4, 13.3] p=0.011).

Sustained response was seen in 50% of the initial responders during 20 out of 24 weeks in the PETIT 2 study and 15 out of 24 weeks in the PETIT study.

### Chronic hepatitis C associated thrombocytopenia studies

The efficacy and safety of eltrombopag for the treatment of thrombocytopenia in patients with HCV infection were evaluated in two ~~randomized~~randomised, double-blind, placebo-controlled studies. ENABLE 1 ~~utilized~~utilised peginterferon alfa-2a plus ribavirin for antiviral treatment and ENABLE 2 ~~utilized~~utilised peginterferon alfa-2b plus ribavirin. Patients did not receive direct acting antiviral agents. In both studies, patients with a platelet count of  $< 75,000/\mu\text{l}$  were enrolled and stratified by platelet count ( $< 50,000/\mu\text{l}$  and  $\geq 50,000/\mu\text{l}$  to  $< 75,000/\mu\text{l}$ ), screening HCV RNA ( $< 800,000$  IU/ml and  $\geq 800,000$  IU/ml), and HCV genotype (genotype 2/3, and genotype 1/4/6).

Baseline disease characteristics were similar in both studies and were consistent with compensated cirrhotic HCV patient population. The majority of patients were HCV genotype 1 (64%) and had bridging fibrosis/cirrhosis. Thirty-one percent of patients had been treated with prior HCV therapies, primarily pegylated interferon plus ribavirin. The median baseline platelet count was 59,500/ $\mu$ l in both treatment groups: 0.8%, 28 % and 72-% of the patients recruited had platelet counts <20,000/ $\mu$ l, <50,000/ $\mu$ l and  $\geq$ 50,000/ $\mu$ l respectively.

The studies consisted of two phases – a pre-antiviral treatment phase and an antiviral treatment phase. In the pre-antiviral treatment phase, **subjects/patients** received open-label eltrombopag to increase the platelet count to  $\geq$ 90,000/ $\mu$ l for ENABLE 1 and  $\geq$ 100,000/ $\mu$ l for ENABLE 2. The median time to achieve the target platelet count  $\geq$ 90,000/ $\mu$ l (ENABLE 1) or  $\geq$ 100,000/ $\mu$ l (ENABLE 2) was 2 weeks.

The primary efficacy endpoint for both studies was sustained virologic response (SVR), defined as the percentage of patients with no detectable HCV-RNA at 24 weeks after completion of the planned treatment period.

In both HCV studies, a significantly greater proportion of patients treated with eltrombopag (n = 201, 21-%) achieved SVR compared to those treated with placebo (n=65, 13-%) (see Table 7). The improvement in the proportion of patients who achieved SVR was consistent across all subgroups in the randomisation strata (baseline platelet counts (<50,000 vs.  $\geq$ 50,000), viral load (<800,000 IU/ml vs.  $\geq$ 800,000 IU/ml) and genotype (2/3 vs. 1/4/6)).

**Table 7.12: Virologic response in HCV patients in ENABLE 1 and ENABLE 2**

	<b>Pooled Data</b>		<b>ENABLE 1<sup>a</sup></b>		<b>ENABLE 2<sup>b</sup></b>	
Patients achieving target platelet counts & initiating antiviral therapy <sup>c</sup>	1,439/1,520 (95-%)		680/715 (95-%)		759/805 (94-%)	
	<b>Eltrombopag</b>	<b>Placebo</b>	<b>Eltrombopag</b>	<b>Placebo</b>	<b>Eltrombopag</b>	<b>Placebo</b>
<b>Total number of patients entering Antiviral Treatment Phase</b>	<b>n = 956</b>	<b>n = 485</b>	<b>n = 450</b>	<b>n = 232</b>	<b>n = 506</b>	<b>n = 253</b>
	<b>% patients achieving virologic response</b>					
<b>Overall SVR<sup>d</sup></b>	21	13	23	14	19	13
<i>HCV RNA Genotype</i>						
Genotype 2/3	35	25	35	24	34	25
Genotype 1/4/6 <sup>e</sup>	15	8	18	10	13	7
<i>Albumin levels<sup>f</sup></i>						
$\leq$ 35g/L	11	8				
$>$ 35g/L	25	16				
<i>MELD score<sup>f</sup></i>						
$\geq$ 10	18	10				
$<$ 10	23	17				

a Eltrombopag given in combination with peginterferon alfa-2a (180  $\mu$ g/meg once weekly for 48 weeks for genotypes 1/4/6; 24 weeks for genotype 2/3) plus ribavirin (800 to 1200 mg daily in 2 divided doses orally)

b Eltrombopag given in combination with peginterferon alfa-2b (1.5  $\mu$ g/meg/kg once weekly for 48 weeks for genotype 1/4/6; 24 weeks for genotype 2/3) plus ribavirin (800 to 1400 mg orally in 2 divided doses)

c Target platelet count was  $\geq$  90,000/ $\mu$ l for ENABLE 1 and  $\geq$  100,000/ $\mu$ l for ENABLE 2. For ENABLE 1, 682 patients were randomised to the antiviral treatment phase; however 2 **subjects/patients** then withdrew consent prior to receiving antiviral therapy.

d P value < 0.05 for eltrombopag versus placebo

- e 64 % subjectspatients participating in ENABLE 1 and ENABLE 2 were genotype 1
- f Post-hoc analyses

Other secondary findings of the studies included the following: significantly fewer patients treated with eltrombopag prematurely discontinued antiviral therapy compared to placebo (45-% vs. 60-%,  $p = <0.0001$ ). A greater proportion of patients on eltrombopag did not require any antiviral dose reduction as compared to placebo (45-% versus, 27-%). Eltrombopag treatment delayed and reduced the number of peginterferon dose reductions.

#### First-line treatment of severe splastic Anaemia

Eltrombopag in combination with horse antithymocyte globulin (h-ATG) and cyclosporine was investigated in a single-arm, single-center, open-label sequential cohort trial (Study ETB115AUS01T, referred to as Study US01T [NCT01623167]) in patients with severe aplastic anaemia who had not received prior immunosuppressive therapy (IST) with any ATG, alemtuzumab, or high dose cyclophosphamide. A total of 153 patients received eltrombopag in Study US01T in three sequential cohorts and an extension of the third cohort. The multiple cohorts received the same eltrombopag starting dose but differed by treatment start day and duration. The starting dose of eltrombopag for patients 12 years and older was 150 mg once daily (a reduced dose of 75 mg was administered for East and Southeast Asians), 75 mg once daily for paediatric patients aged 6 to 11 years (a reduced dose of 37.5 mg was administered for East and Southeast Asians), and 2.5 mg/kg once daily for paediatric patients aged 2 to 5 years (a reduced dose of 1.25 mg/kg was administered for East and Southeast Asians).

- Cohort 1 (n=30): Eltrombopag on Day 14 to Month 6 (D14-M6) plus h-ATG and cyclosporine
- Cohort 2 (n=31): Eltrombopag on Day 14 to Month 3 (D14-M3) plus h-ATG and cyclosporine
- Cohort 3 + Extension cohort [Eltrombopag D1-M6 cohort] (n = 92): Eltrombopag on Day 1 to Month 6 (D1-M6) plus h-ATG and cyclosporine (with all patients eligible to receive low dose of cyclosporine (maintenance dose) if they achieved a haematologic response at 6 months)

Eltrombopag dose reductions were conducted for elevated platelet counts and hepatic impairment. Table 13 includes the dosages of h-ATG and cyclosporine administered in combination with eltrombopag in Study US01T.

Data from the Cohort 3 + Extension cohort support the efficacy of Eltrombopag for the first-line treatment of patients with severe aplastic anaemia (Table 14). The results presented in this section represent the findings from the Cohort 3 and Extension cohort (n = 92).

**Table 13 Dosages of immunosuppressive therapy administered with eltrombopag in study US01T**

<u>Agent</u>	<u>Dose Administered in the Pivotal Trial</u>
<u>Horse antithymocyte globulin (h-ATG)*</u>	<u>40 mg/kg/day, based on actual body weight, administered intravenously on Days 1 to 4 of the 6-month treatment period</u>
<u>Cyclosporine<sup>a</sup> (therapeutic dose for 6 months, from Day 1 to Month 6, adjusted to obtain a target therapeutic trough level between 200 mcg/L and 400 mcg/L)</u>	<p><u>Patients 12 years and older (total daily dose of 6 mg/kg/day) 3 mg/kg, based on actual body weight, orally every 12 hours for 6 months, starting on Day 1</u></p> <p><u>Patients &gt; 20 years of age with a body mass index &gt; 35 or patients 12 to 20 years of age with a body mass index &gt; 95<sup>th</sup> percentile:</u>  <u>3 mg/kg, based on adjusted body weight<sup>b</sup>, orally every 12 hours for 6 months, starting on Day 1</u></p> <p><u>Patients 2 to 11 years of age (total daily dose of 12 mg/kg/day) 6 mg/kg, based on actual body weight, orally every 12 hours for 6 months, starting on Day 1</u></p> <p><u>Patients 2 to 11 years of age with a body mass index &gt; 95<sup>th</sup> percentile:</u>  <u>6 mg/kg, based on adjusted body weight<sup>b</sup>, orally every 12 hours for 6 months, starting on Day 1</u></p>
<u>Cyclosporine (maintenance dose, from Month 6 to Month 24)</u>	<u>For patients who achieve a haematologic response at 6 months 2 mg/kg/day administered orally at a fixed dose for an additional 18 months</u>

<sup>a</sup> Dose of cyclosporine was adjusted to achieve the above recommended target trough levels; refer to the appropriate cyclosporine prescribing information

<sup>b</sup> Calculated as the midpoint between the ideal body weight and actual body weight

\* h-ATG was used in the single-arm, single-centre, open-label study. If h-ATG is not available, substitution with the appropriate local immunosuppressive therapy based on physician's discretion is recommended. The local prescribing information for this therapy/these therapies or local treatment guidelines should be consulted for dosing information.

In the eltrombopag D1-M6 cohort, the median age was 28 years (range 5 to 82 years) with 16% and 28% of patients ≥ 65 years of age and < 17 years of age, respectively. Forty-six percent of patients were male and the majority of patients were White (62%). Patients weighing 12 kg or less or patients with ALT or AST > 5x upper limit of normal were excluded from the trial.

The efficacy of eltrombopag in combination with h-ATG and cyclosporine was established on the basis of complete haematological response at 6 months. A complete response was defined as haematological parameters meeting all 3 of the following values on 2 consecutive serial blood count measurements at least one week apart: absolute neutrophil count (ANC) > 1000/mcL, platelet count > 100 x 10<sup>9</sup>/L and haemoglobin > 10 g/dL. A partial response was defined as blood counts no longer meeting the standard criteria for severe pancytopenia in severe aplastic anaemia equivalent to 2 of the following values on 2 consecutive serial blood count measurements at least one week apart: ANC > 500/mcL, platelet count > 20 x 10<sup>9</sup>/L, or reticulocyte count >60,000/mcL. Overall response rate is defined as the number of partial responses plus complete responses.

**Table 14 Study US01T: Haematologic Response in First-Line Treatment of Patients With Severe Aplastic Anaemia**

	<u>Eltrombopag D1-M6 + h-ATG + cyclosporine</u> <b>N = 92</b>
<b>Month 6, n<sup>a</sup></b>	<b>87</b>
Overall response, n (%) [95% CI]	69 (79) [69, 87]
Complete response, n (%) [95% CI]	38 (44) [33, 55]
<b>Median duration of overall response, n<sup>b</sup></b>	<b>70</b>
Months (95% CI)	24.3 (21.4, NE)
<b>Median duration of complete response, n<sup>b</sup></b>	<b>46</b>
Months (95% CI)	24.3 (23.0, NE)

<sup>a</sup> The number of patients who reached the 6-month assessment or withdrew earlier is the denominator for percentage calculation

<sup>b</sup> Number of responders at any time

NE = not estimable

The overall and complete haematological response rates at Year 1 (N = 78) are 56.4% and 38.5% and at Year 2 (N = 62) are 38.7% and 30.6%, respectively.

### Paediatric patients

The safety and efficacy of eltrombopag in combination with h-ATG and cyclosporine for the first-line treatment of severe aplastic anaemia in paediatric patients 2 years and older were evaluated in a single-arm, open-label trial [see sections 4.8 and 5.1]. A total of 26 paediatric patients (ages 2 to < 17 years) were evaluated; 12 children (aged 2 to < 12 years) and 14 adolescents (aged 12 to < 17). See section 4.2 for dosing recommendations for paediatric patients 6 years and older.

The safety and efficacy of eltrombopag in combination with h-ATG and cyclosporine in paediatric patients younger than 2 years for the first-line treatment of severe aplastic anaemia have not yet been established. In patients 2 to 16 years of age, 69% of patients experienced serious adverse events compared to 42% in patients 17 years and older. Among the 12 patients who were 2 to 11 years of age in the eltrombopag D1-M6 cohort and reached the 6-month assessment or withdrew earlier, the complete response rate at Month 6 was 8% versus 46% in patients age 12 to 16 years and 50% in patients 17 years of age and older.

Thirty-four patients 2 to 16 years of age were enrolled in Study US01T. In the D1-M6 cohort, 7 and 17 out of 25 paediatric patients achieved a complete and overall response, respectively, at 6 months.

### Refractory Severe aplastic anaemia

Eltrombopag was studied in a single-arm, single-center, open-label ~~trial~~ study (Study ETB115AUS28T, referred to as Study US28T [NCT00922883]) in 43 patients with severe aplastic anaemia who had an insufficient response to at least one prior immunosuppressive therapy and who had a platelet count  $\leq$  30,000/ $\mu$ l.

Eltrombopag was administered at an initial dose of 50 mg once daily for 2 weeks and increased over 2 week periods up to a maximum dose of 150 mg once daily. The efficacy of eltrombopag in the study was evaluated by the hematologic response assessed after 12 weeks of treatment.

Haematologic response was defined as meeting 1 or more of the following criteria: 1) platelet count increases to 20,000/ $\mu$ l above baseline, or stable platelet counts with transfusion independence for a minimum of 8 weeks; 2) haemoglobin increase by greater than 1.5 g/dL, or a reduction in greater than

or equal to 4 units of RBC transfusions for 8 consecutive weeks; 3) ANC increase of 100% or an ANC increase greater than  $0.5 \times 10^9/L$ .

Eltrombopag was discontinued after 16 weeks if no hematologic response was observed. Patients who responded continued therapy in an extension phase of the trial.

The treated population had median age of 45 years (range 17 to 77 years) and 56% were male. At baseline, the median platelet count was 20,000/ $\mu$ l, hemoglobin was 8.4 g/dL, ANC was  $0.58 \times 10^9/L$  and absolute reticulocyte count was  $24.3 \times 10^9/L$ . 86% of patients were RBC transfusion dependent and 91% were platelet transfusion dependent. The majority of patients (84%) received at least 2 prior immunosuppressive therapies. Three patients had cytogenetic abnormalities at baseline.

Table 8-15 presents the efficacy results.

**Table 8-15: Study US28T: Haematologic Response in Patients with Severe Aplastic Anaemia**

Outcome	eltrombopag N = 43
Response rate <sup>a</sup> , n (%)	17 (40)
95% CI (%)	(25, 56)
Median of duration of response in months (95%CI)	NR <sup>b</sup> (3.0, NR <sup>b</sup> )

<sup>a</sup> Includes single- and multi-lineage.

<sup>b</sup> NR = Not reached due to few events (relapsed).

In the 17 responders, the platelet transfusion-free period ranged from 8 to 1,096 days with a median of 200 days, and the RBC transfusion-free period ranged from 15 to 1,082 days with a median of 208 days.

In the extension phase, 8 patients achieved a multi-lineage response; 4 of these patients subsequently tapered off treatment with eltrombopag and maintained the response (median follow up: 8.1 months, range: 7.2 to 10.6 months).

## 5.2 Pharmacokinetic properties

### Pharmacokinetics

The plasma eltrombopag concentration-time data collected in 88 patients with ITP in Studies studies TRA100773A and TRA100773B were combined with data from 111 healthy adult subjects in a population PK analysis. Plasma eltrombopag AUC<sub>(0-τ)</sub> and C<sub>max</sub> estimates for ITP patients are presented (Table 9-16).

**Table 9-16: Geometric mean (95 % confidence intervals) of steady-state plasma eltrombopag pharmacokinetic parameters in adults with ITP**

Eltrombopag dose, once daily	N	AUC <sub>(0-τ)</sub> <sup>a</sup> , $\mu$ g.h/ml	C <sub>max</sub> <sup>a</sup> , $\mu$ g/ml
30 mg	28	47 (39, 58)	3.78 (3.18, 4.49)
50 mg	34	108 (88, 134)	8.01 (6.73, 9.53)
75 mg	26	168 (143, 198)	12.7 (11.0, 14.5)

<sup>a</sup> AUC<sub>(0-τ)</sub> and C<sub>max</sub> based on population PK post-hoc estimates.

<sup>a</sup> AUC<sub>(0-τ)</sub> and C<sub>max</sub> based on population PK post-hoc estimates.



Plasma eltrombopag concentration-time data collected in 590 ~~subjects~~patients with HCV enrolled in pPhase III studies TPL103922/ENABLE 1 and TPL108390/ENABLE 2 were combined with data from patients with HCV enrolled in the pPhase II study TPL102357 and healthy adult subjects in a population PK analysis. Plasma eltrombopag  $C_{max}$  and  $AUC_{(0-\tau)}$  estimates for patients with HCV enrolled in the pPhase ~~III~~3 studies are presented for each dose studied in Table ~~10~~17.

**Table ~~10~~17 — Geometric mean (95-% CI) steady-state plasma eltrombopag pharmacokinetic parameters in patients with chronic HCV**

Eltrombopag dose (once daily)	N	$AUC_{(0-\tau)}$ ( $\mu\text{g}\cdot\text{h}/\text{ml}$ )	$C_{max}$ ( $\mu\text{g}/\text{ml}$ )
25 mg	330	118 (109, 128)	6.40 (5.97, 6.86)
50 mg	119	166 (143, 192)	9.08 (7.96, 10.35)
75 mg	45	301 (250, 363)	16.71 (14.26, 19.58)
100 mg	96	354 (304, 411)	19.19 (16.81, 21.91)

~~Data presented as geometric mean (95-% CI).  $AUC_{(0-\tau)}$  and  $C_{max}$  based on population PK post-hoc estimates at the highest dose in the data for each patient.~~

Data presented as geometric mean (95% CI).  $AUC_{(0-\tau)}$  and  $C_{max}$  based on population PK post-hoc estimates at the highest dose in the data for each patient

#### Absorption and bioavailability

Eltrombopag is absorbed with a peak concentration occurring 2 to 6 hours after oral administration. Administration of eltrombopag concomitantly with antacids and other products containing polyvalent cations such as dairy products and mineral supplements significantly reduces eltrombopag exposure (see section 4.2). The absolute oral bioavailability of eltrombopag after administration to humans has not been established. Based on urinary excretion and metabolites eliminated in faeces, the oral absorption of drug-related material following administration of a single 75 mg eltrombopag solution dose was estimated to be at least 52-%.

#### Distribution

Eltrombopag is highly bound to human plasma proteins (>99.9 %), predominantly to albumin. Eltrombopag is a substrate for BCRP, but is not a substrate for P-glycoprotein or OATP1B1.

#### Biotransformation

Eltrombopag is primarily ~~metabolized~~metabolised through cleavage, oxidation and conjugation with glucuronic acid, glutathione, or cysteine. In a human radiolabel study, eltrombopag accounted for approximately 64 % of plasma radiocarbon  $AUC_{0-\infty}$ . Minor metabolites due to glucuronidation and oxidation were also detected. *In vitro* studies suggest that CYP1A2 and CYP2C8 are responsible for oxidative metabolism of eltrombopag. Uridine diphosphoglucuronyl transferase UGT1A1 and UGT1A3 are responsible for glucuronidation, and bacteria in the lower gastrointestinal tract may be responsible for the cleavage pathway.

#### Elimination

Absorbed eltrombopag is extensively metabolised. The predominant route of eltrombopag excretion is via faeces (59 %) with 31 % of the dose found in the urine as metabolites. Unchanged parent compound (eltrombopag) is not detected in urine. Unchanged eltrombopag excreted in faeces accounts for approximately 20 % of the dose. The plasma elimination half-life of eltrombopag is approximately 21-32 hours.

### Pharmacokinetic interactions

Based on a human study with radiolabelled eltrombopag, glucuronidation plays a minor role in the metabolism of eltrombopag. Human liver microsome studies identified UGT1A1 and UGT1A3 as the enzymes responsible for eltrombopag glucuronidation. Eltrombopag was an inhibitor of a number of UGT enzymes *in vitro*. Clinically significant drug interactions involving glucuronidation are not anticipated due to limited contribution of individual UGT enzymes in the glucuronidation of eltrombopag.

Approximately 21 % of an eltrombopag dose could undergo oxidative metabolism. Human liver microsome studies identified CYP1A2 and CYP2C8 as the enzymes responsible for eltrombopag oxidation. Eltrombopag does not inhibit or induce CYP enzymes based on *in vitro* and *in vivo* data (see section 4.5).

*In vitro* studies demonstrate that eltrombopag is an inhibitor of the OATP1B1 transporter and an inhibitor of the BCRP transporter and eltrombopag increased exposure of the OATP1B1 and BCRP substrate rosuvastatin in a clinical drug interaction study (see section 4.5). In clinical studies with eltrombopag, a dose reduction of statins by 50 % was recommended.

~~The co-administration of 200 mg ciclosporin (a BCRP inhibitor) decreased the  $C_{max}$  and the  $AUC_{inf}$  of eltrombopag by 25% and 18%, respectively. The co-administration of 600 mg ciclosporin decreased the  $C_{max}$  and the  $AUC_{inf}$  of eltrombopag by 39% and 24%, respectively.~~

Eltrombopag chelates with polyvalent cations such as iron, calcium, magnesium, aluminium, selenium and zinc (see sections 4.2 and 4.5).

~~*In vitro* studies demonstrated that eltrombopag is not a substrate for the organic anion transporter polypeptide, OATP1B1, but is an inhibitor of this transporter ( $IC_{50}$  value of 2.7  $\mu$ M (1.2  $\mu$ g/ml). *In vitro* studies also demonstrated that eltrombopag is a breast cancer resistance protein (BCRP) substrate and inhibitor ( $IC_{50}$  value of 2.7  $\mu$ M (1.2  $\mu$ g/ml).~~

~~Administration of a single 50 mg dose of eltrombopag in tablet form with a standard high-calorie, high-fat breakfast that included dairy products reduced plasma eltrombopag mean  $AUC_{0-\infty}$  by 59% and mean  $C_{max}$  by 65%.~~

~~Food low in calcium (< 50 mg calcium) including fruit, lean ham, beef and unfortified (no added calcium, magnesium or iron) fruit juice, unfortified soya milk and unfortified grain did not significantly impact plasma eltrombopag exposure, regardless of calorie and fat content (see sections 4.2 and 4.5).~~

### Special patient populations

#### Renal impairment

The pharmacokinetics of eltrombopag ~~have~~ been studied after administration of eltrombopag to adult subjects with renal impairment. Following administration of a single 50 mg ~~-~~dose, the  $AUC_{0-\infty}$  of eltrombopag was 32 % to 36 % lower in subjects with mild to moderate renal impairment, and 60 % lower in subjects with severe renal impairment compared with healthy volunteers. There was

substantial variability and significant overlap in exposures between patients with renal impairment and healthy volunteers. Unbound eltrombopag (active) concentrations for this highly protein-bound medicinal product were not measured. Patients with impaired renal function should use eltrombopag with caution and close monitoring, for example by testing serum creatinine and/or urine analysis (see section 4.2). The efficacy and safety of eltrombopag ~~has~~ have not been established in subjects with both moderate to severe renal impairment and hepatic impairment.

### Hepatic impairment

The pharmacokinetics of eltrombopag have been studied after administration of eltrombopag to adult subjects with hepatic impairment. Following the administration of a single 50 mg dose, the  $AUC_{0-\infty}$  of eltrombopag was 41 % higher in subjects with mild hepatic impairment and 80 % to 93 % higher in subjects with moderate to severe hepatic impairment compared with healthy volunteers. There was substantial variability and significant overlap in exposures between patients with hepatic impairment and healthy volunteers. Unbound eltrombopag (active) concentrations for this highly protein-bound medicinal product were not measured.

The influence of hepatic impairment on the pharmacokinetics of eltrombopag following repeat administration was evaluated using a population pharmacokinetic analysis in 28 healthy adults and 714 patients with hepatic impairment (673 patients with HCV and 41 patients with chronic liver disease of other aetiology). Of the 714 patients, 642 were with mild hepatic impairment, 67 with moderate hepatic impairment, and 2 with severe hepatic impairment. Compared to healthy volunteers, patients with mild hepatic impairment had approximately 111 % (95 % CI: 45 % to 283 %) higher plasma eltrombopag  $AUC_{(0-\tau)}$  values and patients with moderate hepatic impairment had approximately 183 % (95 % CI: 90 % to 459 %) higher plasma eltrombopag  $AUC_{(0-\tau)}$  values.

Therefore, eltrombopag should not be used in ITP patients with hepatic impairment (Child-Pugh score  $\geq 5$ ) unless the expected benefit outweighs the identified risk of portal venous thrombosis (see sections 4.2 and 4.4). For patients with HCV initiate eltrombopag at a dose of 25 mg once daily (see section 4.2).

### Race

The influence of East Asian ethnicity on the pharmacokinetics of eltrombopag was evaluated using a population pharmacokinetic analysis in 111 healthy adults (31 East Asians) and 88 patients with ITP (18 East Asians). Based on estimates from the population pharmacokinetic analysis, East Asian (i.e. Japanese, Chinese, Taiwanese and Korean) ITP patients had approximately 49 % higher plasma eltrombopag  $AUC_{(0-\tau)}$  values as compared to non-East Asian patients who were predominantly Caucasian, (see section 4.2).

The influence of East Asian ethnicity (such as Chinese, Japanese, Taiwanese, Korean, and Thai) on the pharmacokinetics of eltrombopag was evaluated using a population pharmacokinetic analysis in 635 patients with HCV (145 East Asians and 69 Southeast Asians). Based on estimates from the population pharmacokinetic analysis, East Asian patients had approximately 55 % higher plasma eltrombopag  $AUC_{(0-\tau)}$  values as compared to patients of other races who were predominantly Caucasian (see section 4.2).

## Gender

The influence of gender on the pharmacokinetics of eltrombopag was evaluated using a population pharmacokinetic analysis in 111 healthy adults (14 females) and 88 patients with ITP (57 females). Based on estimates from the population pharmacokinetic analysis, female ITP patients had approximately 23 % higher plasma eltrombopag AUC<sub>(0-τ)</sub> as compared to male patients, without adjustment for body weight differences.

The influence of gender on eltrombopag pharmacokinetics was evaluated using population pharmacokinetics analysis in 635 patients with HCV (260 females). Based on model estimate, female HCV patient had approximately 41 % higher plasma eltrombopag AUC<sub>(0-τ)</sub> as compared to male patients.

## Age

The influence of age on eltrombopag pharmacokinetics was evaluated using population pharmacokinetics analysis in 28 healthy subjects, 673 patients with HCV, and 41 patients with chronic liver disease of other aetiology ranging from 19 to 74 years old. There are no PK data on the use of eltrombopag in patients  $\geq 75$  years. Based on model estimate, elderly ( $\geq 65$  years) patients had approximately 41 % higher plasma eltrombopag AUC<sub>(0-τ)</sub> as compared to younger patients (see section 4.2).

## Paediatric population (aged 1 to 17 years)

The pharmacokinetics of eltrombopag have been evaluated in 168 paediatric ITP **subjects/patients** dosed once daily in two studies, TRA108062/PETIT and TRA115450/PETIT-2. Plasma eltrombopag apparent clearance following oral administration (CL/F) increased with increasing body weight. The effects of race and sex on plasma eltrombopag CL/F estimates were consistent between paediatric and adult patients. East Asian paediatric ITP patients had approximately 43% higher plasma eltrombopag AUC<sub>(0-τ)</sub> values as compared to non-East Asian patients. Female paediatric ITP patients had approximately 25% higher plasma eltrombopag AUC<sub>(0-τ)</sub> values as compared to male patients.

The pharmacokinetic parameters of eltrombopag in paediatric **subjects/patients** with ITP are shown in Table 4.18.

**Table 4.18 - Geometric mean (95% CI) steady-state plasma eltrombopag pharmacokinetic parameters in paediatric **subjects/patients** with ITP (50 mg once daily dosing regimen)**

Age	C <sub>max</sub> (µg/ml)	AUC <sub>(0-τ)</sub> (µg.hr/ml)
12 to 17 years (n=62)	6.80 (6.17, 7.50)	103 (91.1, 116)
6 to 11 years (n=68)	10.3 (9.42, 11.2)	153 (137, 170)
1 to 5 years (n=38)	11.6 (10.4, 12.9)	162 (139, 187)

Data presented as geometric mean (95% CI). AUC<sub>(0-τ)</sub> and C<sub>max</sub> based on population PK post-hoc estimates

### 5.3 Preclinical safety data

#### Safety pharmacology and repeat-dose toxicity

Eltrombopag does not stimulate platelet production in mice, rats or dogs because of unique TPO receptor specificity. Therefore, data from these animals do not fully model potential adverse effects related to the pharmacology of eltrombopag in humans, including the reproduction and carcinogenicity studies.

Treatment-related cataracts were detected in rodents and were dose and time-dependent. At  $\geq 6$  times the human clinical exposure in adult ITP patients at 75 mg/day and 3 times the human clinical exposure in adult HCV patients at 100 mg/day, based on AUC, cataracts were observed in mice after 6 weeks and rats after 28 weeks of dosing. At  $\geq 4$  times the human clinical exposure in ITP patients at 75 mg/day and 2 times the human exposure in HCV patients at 100 mg/day, based on AUC, cataracts were observed in mice after 13 weeks and in rats after 39 weeks of dosing. At non-tolerated doses in pre-weaning juvenile rats dosed from Days 4-32 (approximately equating to a 2-year old human at the end of the dosing period), ocular opacities were observed (histology not performed) at 9 times the maximum human clinical exposure in paediatric ITP patients at 75 mg/day, based on AUC. However, cataracts were not observed in juvenile rats given tolerated doses at 5 times the human clinical exposure in paediatric ITP patients, based on AUC. Cataracts have not been observed in adult dogs after 52 weeks of dosing at 2 times the human clinical exposure in adult or paediatric ITP patients at 75 mg/day and equivalent to the human clinical exposure in HCV patients at 100 mg/day, based on AUC).

Renal tubular toxicity was observed in studies of up to 14 days duration in mice and rats at exposures that were generally associated with morbidity and mortality. Tubular toxicity was also observed in a 2-year oral carcinogenicity study in mice at doses of 25, 75 and 150 mg/kg/day. Effects were less severe at lower doses and were ~~characterized~~ characterised by a spectrum of regenerative changes. The exposure at the lowest dose was 1.2 or 0.8 times the human clinical exposure based on AUC in adult or paediatric ITP patients at 75 mg/day and 0.6 times the human clinical exposure in HCV patients at 100 mg/day, based on AUC. Renal effects were not observed in rats after 28 weeks or in dogs after 52 weeks at exposures 4 and 2 times the human clinical exposure in adult ITP patients and 3 and 2 times the human clinical exposure in paediatric ITP patients at 75 mg/day and 2 times and equivalent to the human clinical exposure in HCV patients at 100 mg/day, based on AUC.

Hepatocyte degeneration and/or necrosis, often accompanied by increased serum liver enzymes, was observed in mice, rats and dogs at doses that were associated with morbidity and mortality or were poorly tolerated. No hepatic effects were observed after chronic dosing in rats (28 weeks) and in dogs (52 weeks) at 4 or 2 times the human clinical exposure in adult ITP patients and 3 or 2 times the human clinical exposure in paediatric ITP patients at 75 mg/day and 2 times or equivalent to the human clinical exposure in HCV patients at 100 mg/day, based on AUC.

At poorly tolerated doses in rats and dogs ( $> 10$  or 7 times the human clinical exposure in adult or paediatric ITP patients at 75 mg/day and  $> 4$  times the human clinical exposure in HCV patients at 100 mg/day, based on AUC), decreased reticulocyte counts and regenerative bone marrow erythroid hyperplasia (rats only) were observed in short-term studies. There were no effects of note on red cell mass or reticulocyte counts after dosing for up to 28 weeks in rats, 52 weeks in dogs and 2 years in mice or rats at maximally tolerated doses which were 2 to 4 times human clinical exposure in adult or paediatric ITP patients at 75 mg/day and  $\leq 2$  times the human clinical exposure in HCV patients at 100 mg/day, based on AUC.

Endosteal hyperostosis was observed in a 28 week toxicity study in rats at a non-tolerated dose of 60 mg/kg/day (6 times or 4 times the human clinical exposure in adult or paediatric ITP patients at 75 mg/day and 3 times the human clinical exposure in HCV patients at 100 mg/day, based on AUC).

There were no bone changes observed in mice or rats after lifetime exposure (2 years) at 4 times or 2 times the human clinical exposure in adult or paediatric ITP patients at 75 mg/day and 2 times the human clinical exposure in HCV patients at 100 mg/day, based on AUC.

### Carcinogenicity and mutagenicity

Eltrombopag was not carcinogenic in mice at doses up to 75 mg/kg/day or in rats at doses up to 40 mg/kg/day (exposures up to 4 or 2 times the human clinical exposure in adult or paediatric ITP patients at 75 mg/day and 2 times the human clinical exposure in HCV patients at 100 mg/day, based on AUC). Eltrombopag was not mutagenic or clastogenic in a bacterial mutation assay or in two *in vivo* assays in rats (micronucleus and unscheduled DNA synthesis, 10 times or 8 times the human clinical exposure in adult or paediatric ITP patients at 75 mg/day and 7 times the human clinical exposure in HCV patients at 100 mg/day, based on  $C_{max}$ ). In the *in vitro* mouse lymphoma assay, eltrombopag was marginally positive (< 3-fold increase in mutation frequency). These *in vitro* and *in vivo* findings suggest that eltrombopag does not pose a genotoxic risk to humans.

### Reproductive toxicity

Eltrombopag did not affect female fertility, early embryonic development or embryofoetal development in rats at doses up to 20 mg/kg/day (2 times the human clinical exposure in adult or adolescent (12-17 years old) ITP patients at 75 mg/day and equivalent to the human clinical exposure in HCV patients at 100 mg/day, based on AUC). Also there was no effect on embryofoetal development in rabbits at doses up to 150 mg/kg/day, the highest dose tested (0.3 to 0.5 times the human clinical exposure in ITP patients at 75 mg/day and HCV patients at 100 mg/day, based on AUC). However, at a maternally toxic dose of 60 mg/kg/day (6 times the human clinical exposure in ITP patients at 75 mg/day and 3 times the human clinical exposure in HCV patients at 100 mg/day, based on AUC) in rats, eltrombopag treatment was associated with embryo lethality (increased pre- and post-implantation loss), reduced foetal body weight and gravid uterine weight in the female fertility study and a low incidence of cervical ribs and reduced foetal body weight in the embryofoetal development study. Eltrombopag should be used during pregnancy only if the expected benefit justifies the potential risk to the foetus (see section 4.6). Eltrombopag did not affect male fertility in rats at doses up to 40 mg/kg/day, the highest dose tested (3 times the human clinical exposure in ITP patients at 75 mg/day and 2 times the human clinical exposure in HCV patients at 100 mg/day, based on AUC). In the pre- and post-natal development study in rats, there were no undesirable effects on pregnancy, parturition or lactation of F<sub>0</sub> female rats at maternally non-toxic doses (10 and 20 mg/kg/day) and no effects on the growth, development, neurobehavioural or reproductive function of the offspring (F<sub>1</sub>). Eltrombopag was detected in the plasma of all F<sub>1</sub> rat pups for the entire 22 hour sampling period following administration of medicinal product to the F<sub>0</sub> dams, suggesting that rat pup exposure to eltrombopag was likely via lactation.

### Phototoxicity

*In vitro* studies with eltrombopag suggest a potential phototoxicity risk; however, in rodents there was no evidence of cutaneous phototoxicity (10 or 7 times the human clinical exposure in adult or paediatric ITP patients at 75 mg/day and 5 times the human clinical exposure in HCV patients at 100 mg/day, based on AUC) or ocular phototoxicity ( $\geq 4$  times the human clinical exposure in adult or paediatric ITP patients at 75 mg/day and 3 times the human clinical exposure in HCV patients at 100 mg/day, based on AUC). Furthermore, a clinical pharmacology study in 36 subjects/patients showed no evidence that photosensitivity was increased following administration of eltrombopag 75 mg. This was measured by delayed phototoxic index. Nevertheless, a potential risk of photoallergy cannot be ruled out since no specific preclinical study could be performed.

## Juvenile animal studies

At non-tolerated doses in pre-weaning rats, ocular opacities were observed. At tolerated doses, no ocular opacities were observed (see above subsection 'Safety pharmacology and repeat-dose toxicity'). In conclusion, taking into account the exposure margins based on AUC, a risk of eltrombopag-related cataracts in paediatric patients cannot be excluded. There are no findings in juvenile rats to suggest a greater risk of toxicity with eltrombopag treatment in paediatric vs. adult ITP patients.

## **6. PHARMACEUTICAL PARTICULARS**

### **6.1 List of excipients**

#### Tablet core

Microcrystalline cellulose  
Mannitol (E421)  
Sodium starch glycolate (Type A)  
Magnesium stearate  
Povidone K30

#### Film-coating components of Revolade 25 mg

Hypromellose  
Titanium dioxide (E171)  
Macrogol 400  
Polysorbate 80

#### Film-coating components of Revolade 50 mg.

Hypromellose  
Titanium dioxide (E171)  
Iron oxide yellow (E172)  
Macrogol 400  
Iron oxide red (E172)

### **6.2 Incompatibilities**

Not applicable.

### **6.3 Shelf life**

The expiry date of the product is indicated on the packaging materials, label and packaging.

### **6.4 Special precautions for storage**

Store below 30°C.

### **6.5 Nature and contents of container**

Aluminum blisters (PA/Alu/PVC/Alu) in a carton containing 14 or 28 film-coated tablets.

Not all pack sizes may be marketed.

### **6.6 Special precautions for disposal**

Any unused medicinal product or waste material should be disposed of in accordance with local requirements.

**7. Manufacturer:**

Glaxo Wellcome S.A., Burgos, Spain.

**8. Registration holder :**

Novartis -Israel Ltd., 36 Shacham St., Petach-Tikva.

**9. ~~License-Registration~~ Numbers:**

Revolade 25 mg 143 55 32036

Revolade 50 mg 143 56 32037

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