Ashford and St. Peter's Hospitals
NHS Foundation Trust

Idiopathic Thrombocytopenic Purpura Management

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Guideline History

Date	Comments	Approved By
Feb 2016	New Guideline	Paediatric Guideline Group
March 2018	Bone marrow aspirate no longer recommended unless neutropenia, hepatosplenomegaly, lymphadenopathy, pallor, lassitude, painful limb/abdomen/back or limp Platelet transfusions not indicated unless severe active haemorrhage ~~Unvaccinated children with ITP should get their vaccines as normal~~	Paediatric Guideline Group
March 2023	Intramuscular injections should be avoided if platelets count <100 - If platelet count <100 consider giving vaccinations subcutaneously All children to be given Tranexamic acid for 7 days for mucosal bleeding (see dosing below). Omeprazole to be given alongside steroids for gastroprotection Chronic ITP now defined as thrombocytopenia persisting for >12 months – (newly diagnosed <3m, persistent is 3-12m and chronic >12m)	Paediatric Guideline Group

Management of Idiopathic Thrombocytopenic Purpura (ITP) in Children Guideline

Introduction

This guideline is for the use of Trust staff members involved in the clinical care of children age 0 to 18 years old.

Immune Thrombocytopenia Purpura is an acquired autoimmune disorder. Low platelet count arises because of impaired platelet production and/or platelet destruction. This can occur as an isolated primary condition or secondary to other conditions.

The typical presentation of primary ITP is of a child more than 6 months old and includes a short (24-48 hour) history of spontaneous/ easy bleeding and bruising with no previous bleeding history. Usually, the child has a history of recent viral infection but is well at the time of presentation.

Platelet count is usually <10-20 $x10^9$/L and blood film is normal.

Initial Assessment:

History (to exclude other causes):

- ◊ Signs of bleeding: unexplained bruising/ bruising with minimal to no trauma, nosebleeds, petechiae, bleeding gums, menorrhagia
- ◊ Systemic symptoms: bone pain, weight loss, loss of appetite, recent coryzal symptoms/ recent viral infections, fever
- ◊ Recent immunisation
- ◊ Medication history
- ◊ Family history of bleeding disorders

Features not consistent with ITP:

- Hepatomegaly
- Splenomegaly
- Lymphadenopathy
- Bone pain

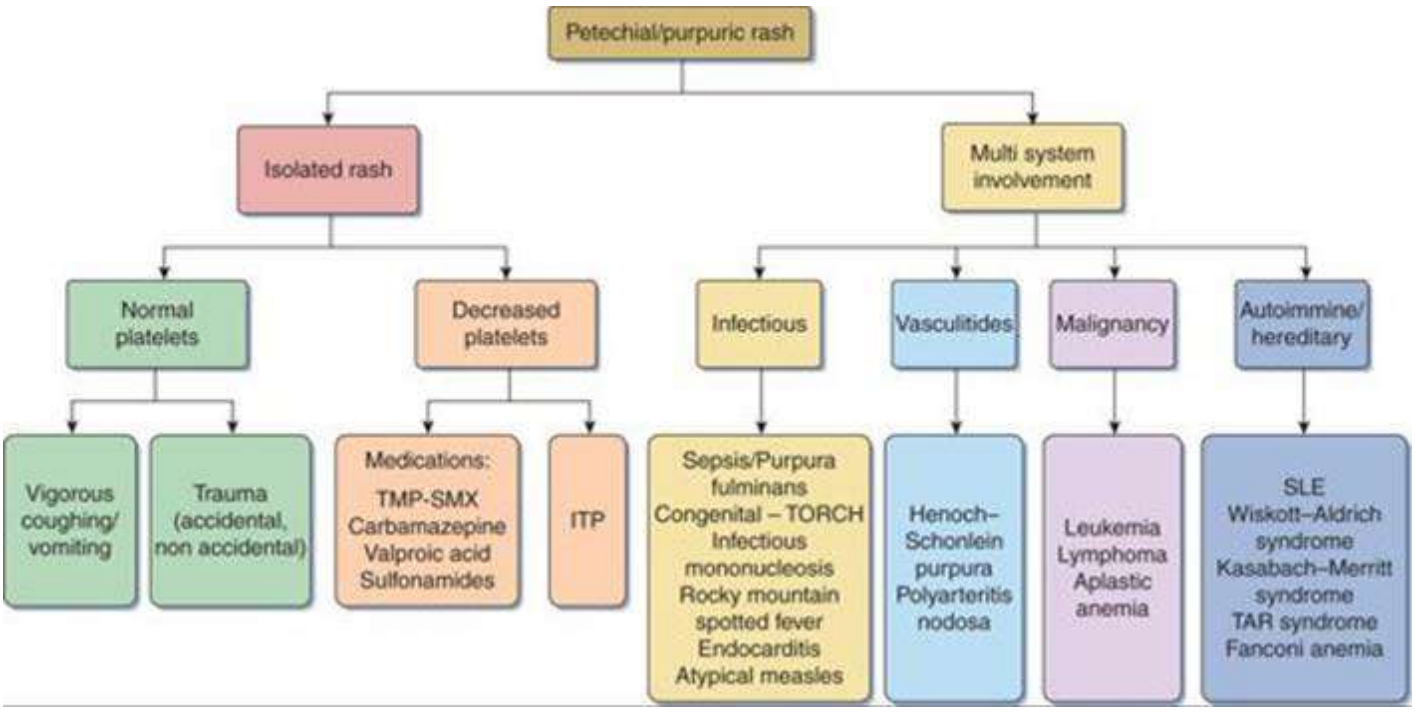
Examination:

- ◊ Petechiae
- ◊ Bruising
- ◊ Blood blisters inside the mouth
- ◊ Assess for lymphadenopathy, splenomegaly and hepatomegaly
- ◊ Fever

Laboratory tests:

- ◊ FBC, reticulocytes and blood film. Generally bone marrow aspirate not required
- ◊ Clotting screen
- ◊ Urea and electrolytes, LFTs
- ◊ Consider CMV and EBV Immunoglobulins if history of infection
- ◊ Consider ANA in older children with ITP or those who have chronic disease (not in primary ITP that has been recently diagnosed).
- ◊ Urgent CT head if low platelets, headache and/or neurological signs
- ◊ *Unexpected thrombocytopenia which is unconcordant with the clinical picture could be due to sampling error and should therefore be repeated.*

Differential Diagnoses



Atypical Features associated with other causes of purpura/ petechiae/ bleeding/ bruising

- ◊ Acute Leukaemia: anaemia, lymphadenopathy, organomegaly
- ◊ Aplastic anaemia: signs of anaemia, recurrent infections
- ◊ Non-accidental injury: abnormal bruising in unusual areas, fractures, delayed presentation, signs of neglect
- ◊ Henoch-Schonlein Purpura: joint pain, abdominal pain, palpable purpura
- ◊ Sepsis: fever, shock, systemic features
- ◊ Haemolytic Uraemic Syndrome: diarrhoea, anaemia, oliguria +/- jaundice

If any atypical features are present → discuss with paediatric consultant on call, and the patient may need further discussion with tertiary Haematology (SGH).

Management of Acute ITP - Calculate Severity

Severity Grade	Bleeding	Management
Mild	- Few petechiae and bruises <5cm - Epistaxis stops within 20 mins of pressure	Observation and Monitoring
Moderate	- Numerous petechiae and bruises >5cm - Intermittent bleeding from lips, gums, oropharynx or GI tract - Menorrhagia, haematemesis, haematuria, melaena without hypotension and Hb drop of <20g/L	Observation OR treatment if multiple sites or previous bleeding
Severe	- Epistaxis requiring cautery or nasal packing - Likely or suspected internal haemorrhage - Menorrhagia, haematemesis, haematuria, melaena causing hypotension or Hb drop of >20g/L	Requires Treatment
Life threatening	- Intracranial haemorrhage - Heavy bleeding leading to: hypotension, prolonged cap refill AND requiring fluid resuscitation or blood transfusion	Urgent treatment

Most children do not require admission to hospital and can be managed as outpatients.

All children to be given Tranexamic acid for 7 days for mucosal bleeding (see dosing below).

All children and their carers should be given information and advice on ITP including (see links below):

- ◊ Avoidance of contact sports and high impact activities or activities with a high risk of trauma, head injury and falls
- ◊ Avoidance of NSAIDs (e.g. ibuprofen)
- ◊ Intramuscular injections should be avoided if platelets count <100
    - If platelet count <100 consider giving vaccinations subcutaneously
- ◊ Alert dentist if any dental procedures scheduled
- ◊ Monitor for signs of bleeding
- ◊ Continue other activities as normal
- ◊ FBC should be repeated within 7-10 days and then every 2-4 weeks for the first 3 months (patients with 2 consecutive normal platelet counts on FBC can be discharged)
- ◊ If thrombocytopenic at 3 months, then discuss with Paediatric Haematology team at SPH

Mild Severity Management:

- Reassure and discharge with safety netting advice
- Arrange with consultant for patient to come back to Ash ward the following week
    - Check for any new symptoms and repeat FBC
- To be followed up in General Paediatric Clinic ideally within 6 weeks
- If still thrombocytopenic at 3 months → refer to Paediatric Haematology Team at SPH (Dr Bhatti and Dr Mitchell)
- Patients with 2 consecutive normal platelet counts on FBC can be discharged

Management of Moderate Severity

- Moderate to severe bleeding at multiple sites
- Give Prednisolone:
    - 4mg/kg/day for 4 days in divided doses (max. 60mg/day)*
    - OR 1-2 mg/kg (max. 60mg/day) for 14 days and then taper
    - Omeprazole for gastroprotection to also be prescribed
- Contraindications to steroids:
    - Active GI bleeding
    - Active chickenpox or other infection
    - Previous non-response to steroids
- If steroids are contra-indicated- Admit and treat with IV Immunoglobulin (IVIg)
    - Dose = 0.8g/kg as a single dose by intravenous infusion. Repeat dose on Day 2 if no improvement
    - Prior to infusion take serum save sample and immunoglobulins
- Once ready for discharge arrange for patient to return to Ash ward for repeat FBC and monitoring of symptoms within 1 week of discharge.
- Discuss with Paediatric Haematology and to be followed up in General Paediatric clinic within 4 weeks of discharge

* Higher doses have been given but need to discuss with Paediatric Haematology Consultants first.

Management of Life- threatening Haemorrhage:

- Platelet transfusion
- Intravenous Immunoglobulins
    - Dose = 0.8g/kg as a single dose by intravenous infusion. Repeat dose on Day 2 if no improvement
    - Prior to infusion take serum save samples and immunoglobulins
- Methylprednisolone 30mg/kg/day (max 1g) PO for 3 days, followed by 20mg/kg/day for 4 days PO
    - Omeprazole to be prescribed for gastroprotection
- If poor platelet response after 24-48 hours – consider 2nd dose of IV Immunoglobulins
- To be reviewed by Paediatric Consultant and discussed with Paediatric Haematology
- To be followed up within 10 days of discharge

Tranexamic acid Dosing:

Tranexamic acid comes as 500mg tablets which can be crushed. Infants <10kg can usually obtain a liquid preparation.

Weight of Child	Dose	Formulation
<10kg	25mg/kg TDS	Liquid from pharmacy
10-15kg	250mg TDS	½ tablet
15-20kg	375mg TDS	¾ tablet
20-30kg	500mg TDS	1 tablet
30-40kg	750mg TDS	1 ½ tablets
>40kg	1g TDS	2 tablets

Management of Chronic ITP:

- Defined as thrombocytopenia persisting for >12 months – (newly diagnosed <3m, persistent is 3-12m and chronic >12m)
- Most children will have no symptoms unless injured
- Children under the age of 10 years will likely enter remission
- Usually, children with chronic ITP do not require treatment but should be regularly followed up and referred to Joint Haematology clinic for long-term management
- If platelets are <10 x10^9/L with repeated mucosal bleeding, menorrhagia, trauma or acute neurological signs → treat as for acute ITP

Information Links for Parents & Carers/ Patients

https://www.evelinalondon.nhs.uk/resources/patient-information/ITP-in-children.pdf

https://itpsupport.org.uk/index.php/en/information/itp-in-children

Supporting References

1. Schafermeyer , R.W. and et, al (2014) *Strange and Schafermeyer's pediatric emergency medicine, fourth edition*, *Apple Books*. McGraw Hill LLC. Available at: https://books.apple.com/us/book/strange-and-schafermeyers-pediatric-emergency/id935388861 (Accessed: January 15, 2023).

2. (2003) *British Journal of Haematology* [Preprint]. Available at: https://d1wqtxts1xzle7.cloudfront.net/37052904/ITP_guidelines-libre.pdf?1426898718=&response-content-disposition=inline%3B+filename%3DGuideline_GUIDELINES_FOR_THE_INVESTIGATI.pdf&Expires=1673791206&Signature=SU3HTVrrcuOPNZnAdkjzY4JtvgJ4yE9kMqycoGIkBe9i9V1xsgUdGeumu82e58i3vP~DsQsogYMHDlRVlejQ6utEXVOasf4T5meR3cR2CHqWzKKnPRzYicUrviXIoz7OS2lrlNeV5J2traTWX~lWLwLqy~fD6YXBhVQrMQ8u~74LhoszvuA0O58UTQK3NQ8iqa1zfmMadLujP5hemUMy2nuYMkfoKvFNmn7sDrC2MP7Z8qVjAn4gM0Ts3wLmts~4qtWYEOjLvZndPPRvSgBkMfikr3YChCDZdt6QRIGuwGOc4j8EhuauKTnpcHiIXFMf9fDEdPocmEVE2xSyl9BOsw__&Key-Pair-Id=APKAJLOHF5GGSLRBV4ZA (Accessed: January 15, 2023).

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4. Faki Osman, M.E. (2012) *Childhood immune thrombocytopenia: Clinical presentation and Management*, *Sudanese journal of paediatrics*. U.S. National Library of Medicine. Available at: https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4949815/ (Accessed: January 15, 2023).

5. Guys and St Thomas' (no date) *Primary immune thrombocytopenia (ITP) - evelina london*, *Evelina London*. Available at: https://www.evelinalondon.nhs.uk/resources/patient-information/ITP-in-children.pdf (Accessed: January 15, 2023).

6. Neunert, C. *et al.* (2019) *Pocket guide - the american society of hematology*, *ASH CLINICAL PRACTICE GUIDELINES IMMUNE THROMBOCYTOPENIA (ITP)*. Available at: https://www.hematology.org/-/media/Hematology/Files/Education/Clinicians/Guidelines-Quality/Documents/ASH_VTE_HIT_PocketGuide.pdf (Accessed: January 15, 2023).

7. Kim, Taylor Olmsted and Jenny M. Despotovic. 2021. “Pediatric Immune Thrombocytopenia (ITP) Treatment.” *Annals of Blood*. Retrieved February 7, 2023 (https://aob.amegroups.com/article/view/6316/html).

8. Morgan, Mervyn. n.d. “Vaccinations and ITP.” *The ITP Support Association*. Retrieved February 7, 2023 (https://www.itpsupport.org.uk/index.php/en/vaccinations-and-itp).

9. St George’s Healthcare NHS Trust, Paediatric Haematology: Thrombocytopenia and Suspected ITP Guideline

10. Sheffield Children’s NHS Foundation Trust, management of Acute Immune Thrombocytopenic Purpura (ITP) Guideline

11. Norfolk and Norwich University Hospitals NHS Foundation Trust: Trust Guideline for the Management of: Newly Diagnosed Immune Thrombocytopenia (ITP) in Children Guideline

3. Supporting relevant trust guidelines

1. St Peter's Hospital Blood Transfusion and Blood Products Guide for Paediatrics
http://nww.asph.nhs.uk/clinicalhaematology/blood.html

2. St Peter's Hospital Paediatric Massive Haemorrhage Protocol
http://nww.asph.nhs.uk/clinicalhaematology/blood.html

3. St Peter's Hospital Intravenous and Subcutaneous Immunoglobulin Prescribing Guidance
http://trustweb.asph.nhs.uk/policies/medicines-policies/immunoglobulin-policy/

2. Guideline Governance

a. Scope

This guideline is relevant to all staff caring for all children from 0-18 years old across the emergency department, inpatient ward and outpatient department.

b. Purpose

i. This guidelines aims to facilitate a common approach to the management of children. At times deviation from the guideline may be necessary, this should be documented and is the responsibility of the attending consultant.

ii. This guideline is subject to regular review to ensure ongoing evidence based practice.

c. Duties and Responsibilities

All healthcare professionals responsible for the care of all children 0-18years should be aware of practice according to this guideline.

d. Approval and Ratification

This guideline will be approved and ratified by the Paediatric Guidelines Group.

e. Dissemination and Implementation

i. This guideline will be uploaded to the trust intranet 'Paediatric Guidelines' page and thus available for common use.
ii. This guideline will be shared as part of ongoing education within the Paediatric Department for both medical and nursing staff.
iii. All members of staff are invited to attend and give comments on the guideline as part of the ratification process.

f. Review and Revision Arrangements

a. This policy will be reviewed on a 3 yearly basis by the appropriate persons.
b. If new information comes to light prior to the review date, an earlier review will be prompted.
c. Amendments to the document shall be clearly marked on the document control sheet and the updated version uploaded to the intranet. Minor amendments will be ratified through the Paediatric Guidelines Group. A minor amendment would consist of no major change in process, and includes but is not limited to, amendments to documents within the appendices.

g. Equality Impact Assessment

Background • Who was involved in the Equality Impact Assessment
Author and the supervising consultants.
Methodology • A brief account of how the likely effects of the policy was assessed (to include race and ethnic origin, disability, gender, culture, religion or belief, sexual orientation, age) • The data sources and any other information used • The consultation that was carried out (who, why and how?)
All groups of staff and patients were taken into consideration and there is no bias towards or against any particular group.
Key Findings • Describe the results of the assessment • Identify if there is adverse or a potentially adverse impacts for any equalities groups
There is no evidence of discrimination.
Conclusion • Provide a summary of the overall conclusions
There is no evidence of discrimination.
Recommendations • State recommended changes to the proposed policy as a result of the impact assessment • Where it has not been possible to amend the policy, provide the detail of any actions that have been identified • Describe the plans for reviewing the assessment
This guideline is appropriate for use.

h. Document Checklist

To be completed (electronically) and attached to any document which guides practice when submitted to the appropriate committee for approval or ratification.

Title of the document: Idiopathic Thrombocytopenic Purpura Management

Policy (document) Author: Dr N. Smith, Dr C. Mitchell

Executive Director: N/A

		Yes/No/ Unsure/NA	Comments
1.	**Title**		
	Is the title clear and unambiguous?	**Y**	
	Is it clear whether the document is a guideline, policy, protocol or standard?	**Y**	
2.	**Scope/Purpose**		
	Is the target population clear and unambiguous?	**Y**	
	Is the purpose of the document clear?	**Y**	
	Are the intended outcomes described?	**Y**	
	Are the statements clear and unambiguous?	**Y**	
3.	**Development Process**		
	Is there evidence of engagement with stakeholders and users?	**N**	
	Who was engaged in a review of the document (list committees/ individuals)?	**Y**	**Dr Mitchell, Dr Bhatti, Paediatric Guidelines Group**
	Has the policy template been followed (i.e. is the format correct)?	**Y**	
4.	**Evidence Base**		
	Is the type of evidence to support the document identified explicitly?	**Y**	

		Yes/No/ Unsure/NA	Comments
	Are local/organisational supporting documents referenced?	**Y**	
5.	**Approval**		
	Does the document identify which committee/group will approve/ratify it?	**Y**	
	If appropriate, have the joint human resources/staff side committee (or equivalent) approved the document?	**N/A**	
6.	**Dissemination and Implementation**		
	Is there an outline/plan to identify how this will be done?	**Y**	
	Does the plan include the necessary training/support to ensure compliance?	**Y**	
7.	**Process for Monitoring Compliance**		
	Are there measurable standards or KPIs to support monitoring compliance of the document?	**N**	
8.	**Review Date**		
	Is the review date identified and is this acceptable?	**Y**	
9.	**Overall Responsibility for the Document**		
	Is it clear who will be responsible for coordinating the dissemination, implementation and review of the documentation?	**Y**	
10.	**Equality Impact Assessment (EIA)**		
	Has a suitable EIA been completed?	Y	

Committee Approval (Paediatric Guidelines Group)			
If the committee is happy to approve this document, please complete the section below, date it and return it to the Policy (document) Owner			
Name of Chair	**Claire Mitchell**	**Date**	**20/03/2023**
Ratification by Management Executive (if appropriate)			
If the Management Executive is happy to ratify this document, please complete the date of ratification below and advise the Policy (document) Owner			
Date: n/a			