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Hematological Disorders

Child Health Nursing

Iron-deficiency anaemia, sickle cell disease, thalassaemia, haemophilia, leukaemia, bleeding disorders and nursing management of children with blood disorders.

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CHAPTER 13 / CHILD HEALTH NURSING 13. Haematological Disorders

1. Assessment

Assess pallor, growth, nutrition, fatigue, jaundice, splenomegaly, infections, bruising and bleeding. CBC/indices, reticulocytes, smear, ferritin, Hb analysis, coagulation and marrow tests as indicated; interpret age-specific Hb ranges.

Iron-deficiency anaemia

Definition and pathophysiology: Iron depletion from low intake, rapid growth or blood loss.

Clinical features and investigations: Pallor, fatigue, pica, microcytosis and low ferritin (interpret inflammation).

Management and nursing care: Age-appropriate iron treatment per prescription, iron-rich foods, avoid excessive cow milk in toddlers, monitor adherence/Hb and investigate cause.

Sickle cell disease

Definition and pathophysiology: Inherited HbS polymerization with haemolysis and vaso-occlusion.

Clinical features and investigations: Anaemia, painful crises, splenic sequestration, acute chest syndrome, stroke and infection risk.

Management and nursing care: Prompt pain relief, appropriate hydration, urgent fever/chest symptoms, prescribed hydroxyurea/prophylaxis and vaccination, disease-specific monitoring and family counselling.

Thalassaemia

Definition and pathophysiology: Inherited reduction in globin chain synthesis.

Clinical features and investigations: Early severe anaemia in major forms, growth issues, splenomegaly, transfusion-related iron overload.

Management and nursing care: Scheduled specialist transfusion/chelation where indicated, monitor growth, cardiac/endocrine/liver complications, genetic counselling.

Haemophilia and bleeding disorders

Definition and pathophysiology: Factor VIII/IX deficiency; other causes include platelet disorders such as ITP.

Clinical features and investigations: Joint/deep bleeding in haemophilia; petechiae/mucosal bleeding in thrombocytopenia; coagulation/factor tests.

Management and nursing care: Prescribed factor treatment, injury prevention without unnecessary restriction, avoid contraindicated medicines/injections; urgent head injury review. ITP treatment depends on bleeding severity.

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Leukaemia

Definition and pathophysiology: Malignant marrow/blood cell proliferation; ALL common in children.

Clinical features and investigations: Fever, pallor, bruises, bone pain, lymphadenopathy; CBC, marrow/flow and staging tests.

Management and nursing care: Protocol-based chemotherapy support, infection and bleeding precautions, monitor lysis and nutrition, school/play support. Fever with neutropenia emergency.

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B.SC. NURSING / CHAPTER-WISE STUDY NOTES

2. Transfusion nursing

Confirm identity, product/compatibility, weight-based volume/rate order and consent. Monitor baseline and early response, prevent overload; stop and escalate suspected reaction. Document lot, time, observations and outcome. Prepare child with explanations and caregiver support.

3. Important Examination Questions

Long Answer Questions

1. 1. Discuss iron deficiency, sickle cell and thalassaemia management.

Short Answer Questions

1. 1. Explain haemophilia
2. 2. list leukaemia manifestations
3. 3. describe transfusion reactions.

Very Short Answer Questions (with answers)

1. 1. Factor VIII deficiency? - Haemophilia A.
2. 2. Common childhood acute leukaemia? - ALL.

4. Quick Revision

- Microcytosis has multiple causes.
- Fever in sickle cell/neutropenia needs urgent review.
- Protect from bleeding while supporting normal development.

5. Conclusion

Microcytosis has multiple causes. Fever in sickle cell/neutropenia needs urgent review. Protect from bleeding while supporting normal development.

Practice questions

Choose one best answer. The answer key and explanations follow the questions.

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1. Which bleeding pattern is more characteristic of haemophilia than thrombocytopenia?

A. Joint and deep-tissue bleeding

B. Petechiae and mucosal bleeding

C. Superficial bruising with gum bleeding

D. Widespread petechiae without joint swelling

2. Which mechanism causes sickle cell disease complications?

A. Reduction in globin-chain synthesis

B. HbS polymerization with haemolysis and vaso-occlusion

C. Immune-mediated platelet destruction

D. Clotting factor VIII deficiency

3. Which complication requires monitoring in a child receiving repeated transfusions for thalassaemia?

A. Progressive iron depletion

B. Vitamin K deficiency as the expected main effect

C. Iron overload

D. Isolated platelet deficiency as the expected main effect

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Answer key and explanations

1. A - Joint and deep-tissue bleeding

Haemophilia commonly causes joint and deep bleeding; thrombocytopenia causes petechiae and mucosal bleeding.

2. B - HbS polymerization with haemolysis and vaso-occlusion

HbS polymerization leads to haemolysis and vaso-occlusion.

3. C - Iron overload

Repeated transfusion can cause iron overload and organ complications.

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