

Mild Haemophilia in Children

Dr Beatrice Nolan Our Lady's Children's Hospital, Crumlin,

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Mild Haemophilia Classification

Factor level >0.05 iu/ml to 0.40 iu/ml

Subcommittee on Factor VIII and IX of Scientific and Standardization Committee of International Society of Thrombosis and Haemostasis

Mild Haemophilia Classification

- Upper limit for mild haemophilia is vague
- The wider the range- the greater the proportion of females

up to 10% if range 0.05-0.5 iu/ml

 Females have same risk of bleeding as males with same level

Mild Haemophilia Epidemiology

- Proportion with mild haemophilia varies
 Resources available
 Awareness of haemophilia among health care professionals
- Annual Global Survey 2004 WFH----- GNP
 34% mild, 43% severe- GNP per capita >10,000 US
 18% mild, 50% severe- GNP per capita < 2,000 US
- Swedish survey of all patients with haemophilia 35% 1960,

54% 1980

Current status of Swedish hemophiliacs : A demographic survey. Blomback et al . Acta Med Scand 1982 ;212: 195-300

Small countries- skewed

Mild Haemophilia Diagnosis

Family investigation- 64% of cases

After 1 or 2 bleeding episodes at mean age of 5.5 years

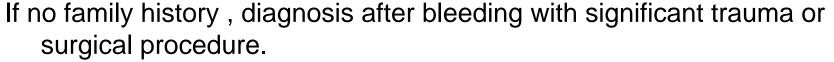
Venkateswaran et al. Mild haemophilia in children: prevalence, complications and treatment. J Paediatr Hematol Oncol 1998;20:32-35.

Average age at diagnosis 2.4 years – France

Chambost et al. What factors influence the age at diagnosis of haemophilia? Results of the French hemophilia cohort J Pediatr 2001;141:548-552

Mild Haemophilia Diagnosis

If family history, diagnosis at birth, umbilical cord blood sample or peripheral venous sample



- Circumcision
- Tonsillectomy
- Dental extractions
- Sports injuries
- Accidents

Many adult males diagnosed when pre-operative screening tests are abnormal

Children with signs of abuse: when is it not child abuse?

<u>Laposata ME</u>, Am J Clin Pathol. 2005 Jun;123 Suppl:S119-24.

Bruises, blood coagulation tests and the battered child syndrome.

<u>Lee AC</u>. Singapore Med J. 2008 Jun;49(6):445-9; quiz 450.

Coagulation testing in the evaluation of suspected child abuse.

• Olivieri M, Hamostaseologie. 2009 May;29(2):190-2.



Mild haemophilia Laboratory Diagnosis

APTT
sensitivity of reagent
deficient factor level

specific factor assay
 difficulties certain molecular defects-

Mild Haemophilia Differential diagnosis

Haemophilia A

- von Willebrand's disease
- combined deficiency of factor V and VIII

Haemophilia B

- combined deficiency of vitamin K dependent factors
- vitamin K deficiency
- liver disease
- vitamin K antagonist drugs
- congenital- y glutamyl carboxylase, vitamin K epoxide reductase

Mild Haemophilia Differential diagnosis

- Mild haemophilia A
- X linked
- Mutation in factor VIII gene
- Capacity of vWF to bind FVIII: normal
- Response to DDAVP : good
- Response to factor VIII concentrate: good

- 2N vWD (Normandy subtype)
- Autosomal recessive
- Mutation in vWF gene
- Capacity of vWF to bind FVIII: reduced
- Response to DDAVP:shorter effect
- Response to factor VIII concentrate: good only if vWF present

Mild Haemophilia

Bleeds -93% traumatic

-rarely spontaneous

Joint - 30%

Soft tissues - 33%

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Haemophilia A or B carriers

- excessive bleeding at menarche
- menorrhagia
- haemorrhagic ovarian cysts
- endometriosis



Mild Haemophilia Recognizing a Bleed

- People with mild haemophilia usually bleed only after significant injury or after invasive procedures such as surgery or dental extraction.
- It is not uncommon for people with mild haemophilia to delay seeking treatment following injury because bleeding occurs so rarely and may not be recognized.

Mild haemophilia Molecular basis

 Haemophilia A discrepant one stage and 2 stage clotting assays

Haemophilia B
 Haemophilia B Leyden

Mild Haemophilia

- Coagulation factor concentrates
- DDAVP
- Anti fibrinolytics

Mild Haemophilia Inhibitors

Usually after intensive exposure to factor concentrate

Haemophilia A

- 3-13% cumulative incidence by age 33
- 2 common mutations
 40% risk of developing inhibitor
- spontaneous tolerance in about 60% after about 9 months
- Severe bleeding/death

Haemophilia B

extremely uncommon

Mild Haemophilia Follow-up

- 2-3 years
- Bleeding history
- Physical exam
- Education

+/-inhibitorscreen