Hemophilia B

Genetics

-Gene: F9 (Coagulation factor IX; Xq27.1-Xq27.2)

-XLR

Clinical findings/Dysmorphic features

-Similar to hemophilia A

-Hemarthrosis or intracranial bleed with mild or no trauma; deep muscle hematomas; prolonged or renewed bleeding after trauma, surgery, tooth extraction, nose bleeds, mouth injury, circumcision; excessive bruising

Etiology

-Prevalence of is ~ 1: 30,000 live male births worldwide; ~ 1/5 as prevalent as hemophilia A

Pathogenesis

-Factor IX activates Factor X --> regulates overall rate of thrombin generation in coagulation

Genetic testing/diagnosis

-Prolonged aPTT: severe: <1%; moderate: 1-5%; mild: 6-30% F9 activity

-Sequencing of F9 first (97%-100%); then gene-targeted del/dup(2%-3%)

-Large gene deletions, nonsense mutations, and most frameshift mutations --> severe disease

Others

-Approx. 30% of females with one pathogenic variant: activity < 40% and bleeding disorder

-Recombinant factor IX concentrate 2-3x/week for severe deficiency; within one hour of trauma