# Acquired Factor VIII inhibitor in Children: Experience in Single Institute

Darintr Sosothikul MD, Koramit Suppipat MD,and Panya Seksarn MD

Department of Pediatrics, Faculty of Medicine, Chulalongkorn University, Bangkok,Thailand 10330

## Objectives:

Acquired factor VIII inhibitor is a rare bleeding disorder caused by an autoantibody against FVIII. The incidence in children under 16 years had been estimated to be 0.045 per million/year. The bleeding patterns are bleeding in skin, soft tissue, mucous membrane and CNS. Until now, there is no standard treatment for this condition in children.

## Methods:

In this study, we report three cases of acquired FVIII inhibitor in children treated at King Chulalongkorn Memorial Hospital from 1995 to 2013.

## Results:

Case I: A previously healthy 13-year-old girl presented with fever , large bruising and bleeding at her lips for 2 weeks. She had no family history of bleeding tendency and not taken any medication. Physical examination showed clotting blood at her lips, hemorrhagic bleb at her left palm and flame shaped hemorrhage at retina. In evaluation of the hemostatic system, the count of platelet and prothrombin time (PT) were normal. There was isolated prolongation of activated partial prothrombin time (APTT) of 145.7 seconds (sec) which was not corrected to normal value in mixing study. FVIII activity was 0.95 % and FVIII inhibitor was found in 1.8 Bethesda unit (BU). SLE was suspected because of positive for direct coombs' test and anti-nuclear antibody. The lupus anticoagulant was positive at the time of diagnosis and then was negative at 3 weeks later. She was treated with prednisolone (2 mg/kg/day). After treatment, APTT turned to be normal in 2 weeks with FVIII level of 120 % and undetected FVIII inhibitor. No clinical bleeding appeared after treatment.

Case II: A 10-year-old girl with history of SLE came to our hospital due to severe epistaxis, bleeding per gum and ecchymosis on both legs for 10 days. She had lost to follow-up her underlying disease for 6 months and had not taken any medication. SLE was in the active state according to her clinical findings malar rash, autoimmune hemolytic anemia, leucopenia, the presence of anti-nuclear antibody, anti-smith and anti-double stranded DNA antibody. Her platelet count was normal. The coagulation test showed isolated prolongation of APTT of 180 sec. and was unable to be corrected in mixing study. Other laboratory finding were FVIII level of 0 % , FVIII inhibitor of 7.9 BU and negative of lupus anticoagulant. Her treatment was prednisolone (2mg/kg/day). FVIII level was normal in 2 weeks with undetectable FVIII inhibitor. SLE was inactive status.

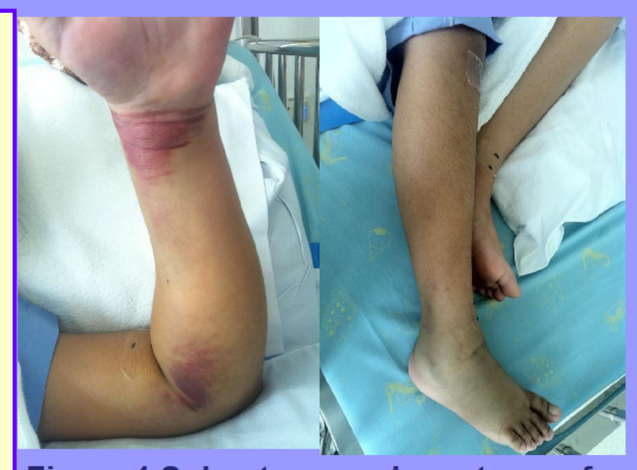

Figure 1 Subcutaneous hematoma of both arms and left legs

Case III: A 9-year-old girl with no underlying disease was referred to our hospital due to soft tissue and muscle bleeding of both arms and legs for 6 days (Fig 1). She had low grade fever, cough and rash 3 days before bleeding. Her laboratory finding were Hb of 11.4 g/dL, WBC of 9.3 x $10^9$ /L, platelet count of 275 x $10^9$ /L. The coagulation test showed PT of 11.4 sec. and APTT of 80.4 sec. FVIII activity was 1.1 % and FVIII inhibitor titer was 7.7 BU. High dose of FVIII concentrate were given due to early sign of compartment syndrome of her both arms followed by steroid administration. Two weeks after treatment, APTT level turned to normal and FVIII inhibitor was negative in 3 weeks. Prednisolone was tapered off in 4 months with normal FVIII level and no detected FVIII inhibitor. The results of autoimmune disease were negative.

## Conclusions:

Two of the three cases in our series are found secondary to SLE and the third case is likely to be post infectious process. The outcome of acquired FVIII inhibitor in children seems to be more favorable than in adults with good responsive to corticosteroids. High dose of FVIII concentrate is required only in the third case due to impending compartment syndrome at her extremity.

## References:

Franchini M, Zaffanello M, Lippi G. Acquired hemophilia in pediatrics: a systemic review. Pediatr Blood Cancer 2010;55(4): 606-11.