A case of inhibitor to factor IX in a two years old boy with severe congenital hemophilia

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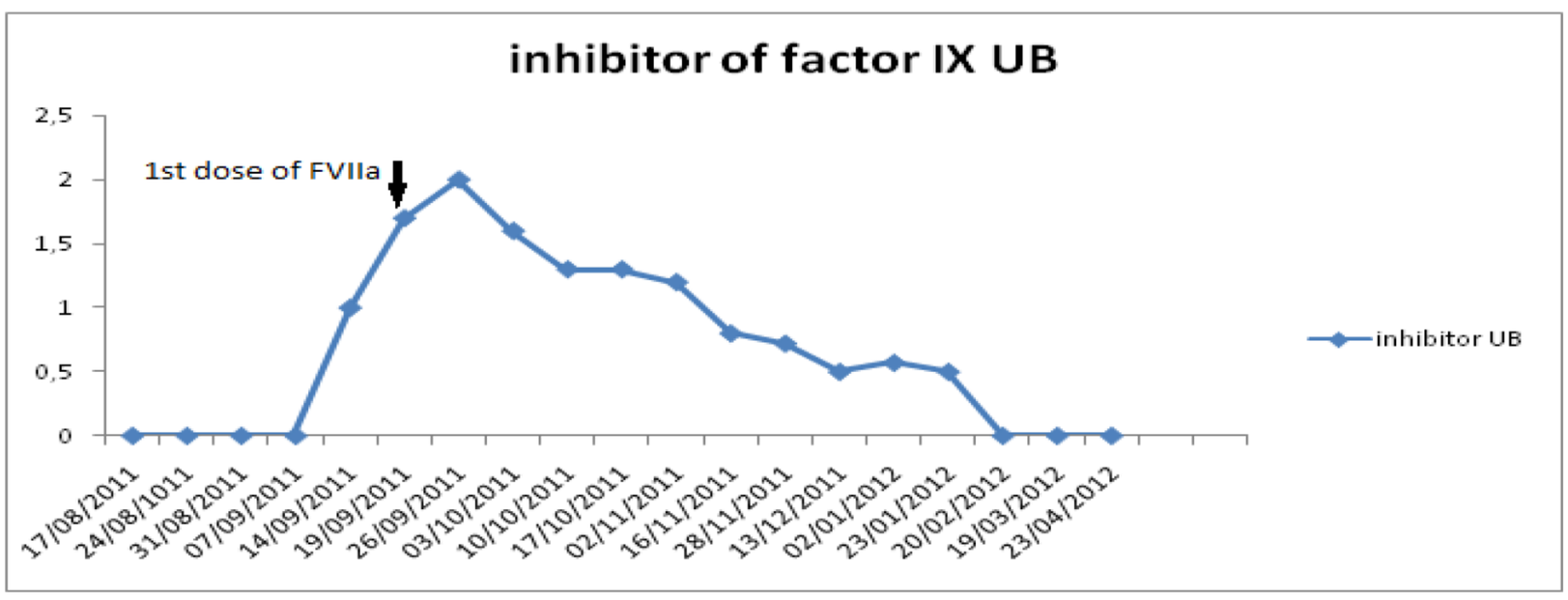
INTRODUCTION

Whereas the inhibitor in hemophilia A is estimated to be as high as 33%, It appears to be less frequent in hemophilia B, occuring in about 1-3% of the hemophilia B patients. The development of inhibitor antibodies to factor IX is a serious complication and it's management is delicate especially when discovered at an early age.

OBSERVATION

We report a case of development of an inhibitor to factor IX in a two years old boy with congenital hemophilia B.
At the age of eight months, ecchymosis at various sites of his body alarmed parents to consult. Hemostasis check up showed a prolonged activated partial thromboplastin time : 100 seconds (control 31 seconds). A severe deficiency of the factor IX has been discovered, without any inhibitor antibody to factor IX.
The biological investigation was extended to the molecular study of the factor IX gene which revealed a complete deletion of the gene (from 5'main promoter to 3' polyadenylation site of the gene). It was reported that this deletion is frequently associated with a development of inhibitor to factor IX, allergic reactions and nephrotic syndrom.
So the diagnostic of severe hemophilia B for this boy was made.
Parents had to take many precautions in order to limit harmful outcomes.
Nevertheless one year later spontaneous left Ankle heamatoma appeared. A recombinant factor IX (Benefix®) treatment was instaured immediately for two days a week at the dose of 91UI/kg/day (1000UI/day).
At the thirteenth dose of Benefix®, an inhibitor to factor IX was detected by the Bethesda assay 1UB.
The treatment of Benefix® was stopped and was replaced by the recombinant factor VIIa (Novoseven®) at the prophylactic dose of 3mg for three days a week. This prophylactic treatment was not enough efficient to prevent heamatoma which required supplementary doses of Novoseven®.
The antibodies inhibitor of factor IX subsequently Increased to a peak titer of 2UB than decreased until being undetectable after five months.



DiSCUSSION AND CONCLUSION

The development of inhibitors among the hemophiliacs is generally considered uncommon and less frequent in severe hemophilia B, but the increased use of FIX products have made this complication more frequent than previously.
Genetic factors are strongly involved but non-genetic risk may also be relevant.
Factor VIIa is a well established treatment for managing bleeding episode in congenital hemophilia patients complicated with antibody inhibitor.
Case reports and some series have shown immune tolerance induction (ITI) with high doses of factor IX including immunosuppressive agents. ITI could be an alternative therapeutic for inhibitor in congenital hemophilia B.

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