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Study of seum Tumor Necrosis Factor Alpha in Pediatric Patients with Hemophilia A

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Abstract : Background: The development of factor VIII (FVIII) inhibitor and hemophilic arthropathy in patients with hemophilia A (PWHA) are a great challenge for hemophilia care. Both genetic and environmental factors led to complications in PWHA. The development of inhibitory antibodies is usually induced by the immune response. Tumor necrosis factor α (TNF-α), one of the cytokines, might contribute to its polymorphism. Aim: Study the association between tumor necrosis alpha level and genotypes in pediatric patients with hemophilia A and its relation to inhibitor development and joint status. Methods: A cross-sectional study was conducted among a sufficient number of PWHA attending the Pediatric Hematology and Oncology Unit, Pediatric department in Menoufia University hospital. The clinical parameters, FVIII, FVIII inhibitor, and serum TNF-α level were assessed. The genotyping of −380G > A TNF-α gene polymorphism was performed using real time polymerase chain reaction. Results: Among the 50 PWHA, 28 (56%) were identified as severe PWHA. The FVIII inhibitor was identified in 6/28 (21.5%) of severe PWHA. There was a significant correlation between serum TNF-α level and the development of inhibitor (p = 0:043). There was significant correlation between polymorphisms of −380G > A TNF-α gene and hemophilic arthropathy development (p = 0:645). Conclusion: The prevalence of FVIII inhibitor in severe PWHA in Menoufia was 21.5%. The frequency of replacement therapy is a risk factor for inhibitor development. Serum TNF-α level and its gene polymorphism might be used to predict inhibitor development and joint status in pediatric patients with hemophilia A.

Keywords : hemophilic arthropathy, TNF alpha., patients witb hemophilia A PWHA, inhibitor
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