Abstract: Background and aim: Clotting occurs when fibrinogen is converted into fibrin by thrombin. Under physiological conditions, the proteolytic activation of the inactive precursor prothrombin into thrombin is the final step in the tightly regulated coagulation cascade. Staphylocoagulase secreted by Staphylococcus aureus directly binds to prothrombin to form the staphylothrombin complex and thus bypasses the coagulation cascade and its physiological regulation. The aim of this study is to examine the effect of staphylococcus aureus coagulase on the hemophilia type A plasma.

Materials and Methods: The coagulase test was performed on 15 hemophilia type A plasma, 15 human normal plasma, and 15 rabbit plasma. Factor VIII in the blood samples of hemophilia were determined, then S. aureus ATCC 8325/4 col were incubated in all of the samples. There were two controls: positive and negative. For the negative control, S. epidermidis was inoculated in citrated plasma of hemophilia sample, and for the positive control, Staphylococcus aureus ATCC 8325/4 col was inoculated in citrated rabbit plasma. Coagulase test plasma coagulation was checked after 1, 2, 4, 8, 20, and 24 h of aerobic incubation at 37°C.

Results: Coagulase clotted all 15 cases of hemophilia plasma with different levels of factor VIII, within less than 24 h. There is no relationship between the time of coagulation and the rate of factor VIII.

Conclusion: It seems that the coagulase have a successful role in clotting blood in patients with Factor VIII deficiency (hemophilia) in which blood clots don't form properly. Coagulase enzyme don't use factor VIII in the path of blood coagulation so clotting blood in hemophilia patient with coagulase can be a vision to help these patients in this process.

Staphylococcus aureus, Coagulase, Hemophilia Type A, Plasma

Presentation: Poster