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TO DELAY THE PROCESS OF BLOOD COAGULATION USING ELECTROLYSIS TECHNIQUE IN SHEEP'S BLOOD.

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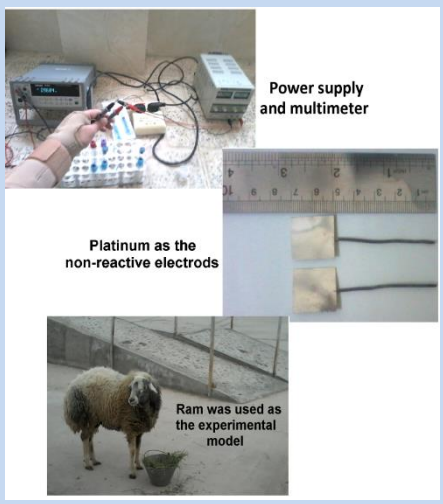
Introduction:

The purpose of this study is to survey effect of the use of Electrolysis technique, on the prevention of the blood coagulation.

To prevent clotting in some medical process such as Coronary Artery Bypass Graft or kidney dialysis, after the wildfowl of blood from the body, certain amount of Heparin, an anticoagulant, is add to the blood while the side effects of Heparin are high .For example: Heparin Induced Thrombocytopenia (HIT), blood thinners, tissue factor pathway inhibitor(TFPI) release,platelet dysfunction, Increased fibrinolysis, The sharp decline antithrombin III, Increased plasma proteins, shock, thrombosis, allergy to Heparin,and Heparin dose calculation error when Activated Clotting time (ACT) test is risky , Heparin antagonist such as protamine sulfate use can cause anaphylactic shock. In addition, cardiac surgery do not recommend surgery even when it is necessary , patients like Hemophiliacs, people with kidney or liver disease, hemolytic uremic syndrome(HUS), people prone to intracranial hemorrhage, patients with ulcerative lesions of the gastrointestinal tract and so on .

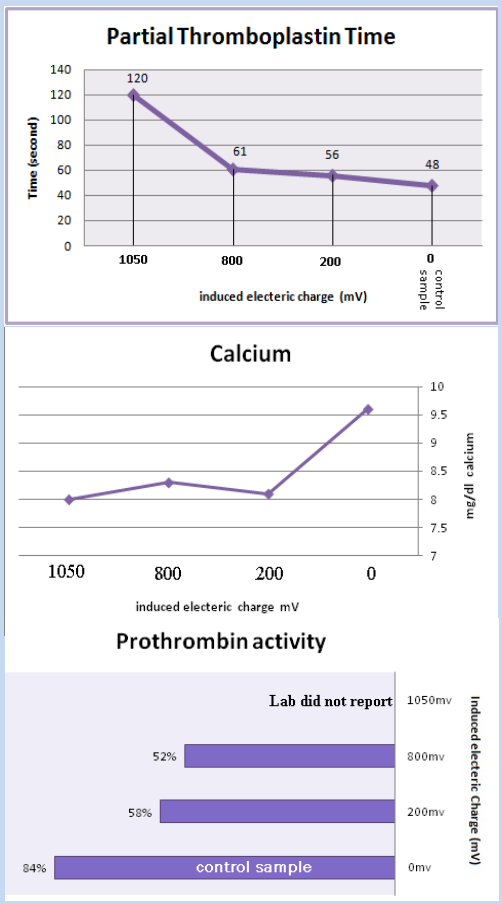
Materials and Methods:

In this study a healthy ram was chosen as an experimental model. The ram was kept in order to spend adaptation period respecting to animal rights. Initial tests confirmed the health of blood coagulation process. Then blood samples were obtained from the jugular vein every 14 days. Each time 10 ml was poured immediately in a container made up of polypropylene polymers. Using of an electrical power-supply and two pieces of platinum as the non-reactive electrodes, a range of 500 to 800 MV electric charges was induced. . At the same time 10 ml of blood was poured in another container as control sample. The remaining blood was divided into three tubes; EDTA, Citrate and tube without anticoagulant for hematological tests. . During the electrolysis blood coagulation process was examined using capillary tube every 30 seconds in both containers. Some sample was taken from both containers at specific time.After 12 minutes and 40 seconds, control blood clotted while the blood of electrolysis container clotted 30 minutes later.



Results:

Partial Thromboplastin Time and Prothrombin Time increased significantly. Prothrombin activity, calcium, fibrinogen and total protein decreased. Other factors also confirmed the delay in blood coagulation process. All of the factors were compared with control sample. Although blood coagulation process was delayed but macroscopic features of the blood were downgraded.



Conclusion:

Although blood coagulation process was delayed, macroscopic features of blood were downgraded. We need more specialized tests to be done so that this method will be more practical.

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