

Dedication

I would like to dedicate this work to my mother and my father who taught me the meaning of life....To my brothers and sisters ...To my friends who share in roads....To all who helps me in preparing this work in heart center hospital... To my teachers and to all patients....

Acknowledgments

I would like to thank Allah who guides my steps in this study.

Thanks to my supervisor Prof .**Sana Eltahir** for her guidance, patience, continuous follow up, advice and great help during my study.

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Abstract

The cardiac surgery activates the coagulation system with initial hypercoagulable state and platelet activation followed by factor and platelet consumption that increase risk of bleeding after cardiac surgery.

This study aimed to measure platelet count, PT, INR and PTT in pre and post –surgery in patient at Sudan heart center.

The study included 100 samples which were taken from cardiac surgery patients (50 pre and 50 post). Using stago –coagulometer to measure PT, INR, and APTT, Platelet count were measured used by Sysmex Kx21n (full automated hematological analyzer).

The results showed significant increase in PT, INR and APTT level in post cardiac compare with pre cardiac, but the platelet count insignificantly decreased in post cardiac compare with pre cardiac. Also showed significant increase in PT, INR and APTT level in post cardiac compare with pre cardiac according to age groups and types of surgery and platelet count insignificantly decreased and according to gender the platelet count show significant decreased in female post cardiac compare with pre cardiac and male insignificantly decreased.

This study concluded that PT, PTT, INR, showed a significant increase post –operatively when compared preoperatively, while Platelets count showed insignificantly decreased post-operatively.

المستخلص

إن العمليات الجراحية للقلب تنشط التجلط عن طريق تنشيط نظام التجلط وتنشيط الصفائح الدموية ثم يتبعها استهلاك كل من عوامل التجلط والصفائح الدموية ما يزيد خطورة النزف بعد العملية الجراحية.

هدفت الى قياس كل من عدد الصفائح الدموية، زمن البروثرومبين، زمن البروثرومبين الجزئي النشط و معدل حساسيه الثرومبولاستين قبل وبعد العملية الجراحية وسط الجزئي مرضى جراحة القلب بمركز السودان للقلب. شملت الدراسة 100 عينة ثم اخذها من مرضى جراحة القلب (50 مريض قبل العملية الجراحية و50 مريض بعد العملية الجراحية). ثم تم فحص التجلط باستخدام جهاز فحص التجلط وتحليل الصفائح الدموية باستخدام سيسميكس كي 21-ن (محلل الدم الأوتوماتيكي).

أظهرت هذه الدراسة ارتفاع مستوي زمن البروثرومبين ومعدل حساسيه الثرومبولاستين والبروثرومبين الجزئي النشط بعد العمليه بصورة ملحوظه بالمقارنة مع قبل العمليه الجراحية كما ينخفض عدد الصفائح الدموية بصورة غير ملحوظه بعد العملية. ايضا يرتفع مستوي زمن البروثرومبين ومعدل حساسيه الثرومبولاستين والبروثرومبين الجزئي النشط بعد العمليه الجراحية بصورة ملحوظه بالمقارنة على حسب الفئات العمرية ونوع العمليه الجراحية و كما ينخفض عدد الصفائح الدموية بصورة غير ملحوظه. وايضا بالمقارنة حسب النوع وجد ان مستوى الصفائح الدموية ينخفض بصورة ملحوظه لدي النساء وبصوره غير ملحوظه لدي الرجال بعد العمليه مقارنة مع قبل العمليه.

خلصت الدراسة الى ان قياسات كل من عدد الصفائح الدموية، البروثرومبين ، زمن البروثرومبين النشط و معدل حساسيه الثرمبو بلاستين أظهرت تغييرا بعد العملية مقارنة بوضعها الطبيعي قبل العملية.

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Abbreviations

ACT	Activated clotting Time
ADP	Adenosine diphosphate
APTT	Activated partial thromboplastin time
ATP	Adenosine triphosphate
CHD	Coronary heart disease
CPB	Cardio pulmonary By pass
DIC	Dissmanted coagulation factor
ECS	Europe cardiovascular surgery
FX12	Hageman contact factor
ICU	Intensive care unit
INR	International normalize ratio
MVR	Mitral valve repair
PAI-1	Plasminogen activator inhibitor -1
PAI-2	Plasminogen activator inhibitor -2
pc	Procoagulant
PDGF	Platelet derived growth factor
PG12	Prostaglandin Prostacyclin
PKK	Prekallikrein
PLT	Platelet
PPP	Platelet poor plasma
PT	Prothrombinme
SPSS	Statistical package of social sciences
TF	Tissue factor
TGF	Transforming growth factor
TPA	Tissue plasminogen activator
V	Labil factor
V11	Proconvertin
VWF	Von will brand factor

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