

بِسْمِ اللَّهِ الرَّحْمَنِ الرَّحِيمِ

«قَالُوا سُبْحَانَكَ لَا عِلْمَ لَنَا إِلَّا مَا عَلَّمْتَنَا
إِنَّكَ أَنْتَ ٱلْعَلِيمُ ٱلْحَكِيمُ»

صدق الله العظيم
سورة البقرة الآية (٣٢)

**HAEMOSTATIC EFFECT OF PREMARIN
POSTOPERATIVELY IN SCOLIOTIC SURGERIES IN
ADOLESCENCE**

Thesis

*Submitted for the partial fulfillment of
M.D degree in Anaesthesiology*

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2008

Abstract

Although several methods are used to minimize hemologus blood transfusion as preoperative banking of blood by the patient several weeks prior to surgery, isovolemic hemodilution, blood salvaging. Also hypotensive anaesthesia with proper positioning and muscle relaxation to decrease blood loss. Yet the patient is usually in need of hemologus blood transfusion.

Blood transfusion is associated with many complications which include immunologic reactions, non immunologic reactions and transmission of infections. For all hazards of blood transfusion, several attempts were done to minimize bleeding.

Key words :

- HAEMOSTATIC EFFECT OF PREMARIN
- POSTOPERATIVELY IN SCOLIOTIC
- SURGERIES IN ADOLESCENCE

List of Abbreviation

AIDs	
ATP	Adenosine tri-phosphate
BP	Blood pressure
C	Degree centigrade
Co ₂	Carbon dioxide
CTEG	Computed thromborelastography
CYP ₃ A ₄	Cytochrome P ₃ A ₄
DDAVP	Deamino-8-D-arginine vasopressin
DIC	Disseminated intravascular coagulation
DURP	Transurethral resection of prostate
EACA	Epsilon-Amino-Caproic Acid
ECG	Electrocardiogram
EEG	Electroencephalogram
ESLP	End stage liver disease
FDP	Fibrinogen degradation product
FFP	Frisk frozen plasma
FSH	Follicle stimulating hormone
GVHD	Graft versus host disease
HCT	Hematocrite
Hgb:	Haemoglobin
HS	Highly significant
ICU	Intensive care unit

IgE	Immunoglobulin E
IgG	Immunoglobulin G
Kg	Kilogram
L	Literr
LH	Lutenizing hormone
MAP	Mean arterial pressure
mcg	Microgram
NS	Non significant
OLT	Orthotopic liver transplantation
PaCO ₂	Arterial partial pressure of carbon dioxide
PC	Prothrombin concentration
Pco ₂	
PT	Prothrombin time
PTT	Partial thromboplastin time
RBC	Red blood corpulse
Rh	Rhesus
S	Significant
SD	Standard deviation
SE	Standard error
SHBG	Sex hormone binding globulin
SSEPs	Somatosensory evoked potentials
TNR	International normalized ratio

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ACKNOWLEDGMENT

I would like to express my profound gratitude to Professor Doctor/ Amr Zaki Mansour Professor of Anaesthesiology, Faculty of Medicine, Cairo University for his most valuable advises and support all through the whole work and for dedicating much of his precious time to accomplish this work,

I am also grateful to Doctor/ Mohammed Farouk Youssef, Assistant Professor of Anaesthesiology, Faculty of Medicine Cairo University for his unique effort, considerable help, assistance and knowledge he offered me through out the performance of this work,

My special thanks and deep obligation to Professor Doctor/ Badawy Mohamed El Kholy, Professor of Clinical Patholog, Faculty of Medicine, Cairo University for his continuous encouragement and supervision and kind care.

Iman Sobhy Abul Fetouh

INTRODUCTION

Patients presenting for repair of scoliosis may undergo either thoracic and or abdominal anterior. Posterior or combined anterior and posterior surgical (circumferential) spine procedures. Circumferential procedures may take up to 12 hours and be associated with significant blood loss (in excess of 50% of the estimated blood volume). Most bleeding originates from the vertebral veins, which become engorged if there is any pressure on the anterior abdomen. Blood loss is also related to the extent of surgery (length of the spine to be fuse) and to e surgeons speed and expertise⁽¹⁾. In some patients, haemostatic abnormalities may increase the bleeding problem⁽²⁾.

Blood loss during and after spinal surgery (surgery for idiopathic scoliosis) is high and often as much or more than the patients total estimated blood volume (EBV)⁽²⁾.

Despite a bleeding time that is usually within normal range, half of the patients with idiopathic scoliosis have abnormal platelets with decreased aggregation in response to epinephrine and adenosine diphosphate. Furthermore the collagen from patients with idiopathic scoliosis aggregates platelets only one fourth as efficiently as the collagen from the normal patients⁽³⁾.

The haemostatic effect of conjugated estrogen (premarin) {Wyeth – Ayrest Lab Philadelphia} has been reported in numerous

studies. Estrogen has been reported to manage uncontrolled bleeding of uterine hameorrhage, subarachnoid and rectal hameorrhage (4-6). In patients with renal failure and abnormal haemostasis there was improvement in bleeding time with regular schedual of oral premarin⁽⁵⁾.

Patients with congenital scoliosis, neuromuscular disease or curve $>65^{\circ}$ can have significant respiratory impairment. Thoracic deformities can result in a restrictive lung pattern with reduced vital capacity⁽⁶⁾. In general, if the vital capacity is greater than 70% of predicted respiratory reserve should be adequate. If less than 40% post. Operative ventilation will probably be necessary⁽⁷⁾.

Hypothesis

Conjugated estrogens observations suggested that a single injection of conjugated estrogen resulted in a prompt and marked reduction in the volume of drainage within 8 to 16 hours after injection after scoliosis surgery. However there were no control subjects, no standardization of what constituted excessive postoperative bleeding. The conjugated estrogen was not given until late in the postoperative course (8hs after surgery). The final observations were that prospective and randomized studies were needed to assess the validity of their results.

AIM OF THE STUDY

Is to investigate the ability of the conjugated estrogen (premarin) single injection 1 mg/kg 8 hourly preoperative to reduce the intraoperative and postoperative bleeding and hence reduce the need for blood transfusion of scoliotic surgeries.

DEFINITION AND TYPES OF SCOLIOSIS

Scoliosis is the lateral curvature of the spine that develops during the growth years which may be either idiopathic or paralytic. In idiopathic scoliosis, there is no detectable cause. In paralytic scoliosis, the spinal deformity occurs as a result to a neurologic disease.

Idiopathic scoliosis

In idiopathic scoliosis, there may be other orthopedic deformities such as developmental dislocation of the hip and congenital talpes equinoovarsus⁽¹⁾. Also, congenital heart disease is present in 2% and mental retardation is present in 5%⁽³⁾.

Types of idiopathic scoliosis:

According to the age of onset of deformity it is classified into:

1. Infantile type: during the first 3 years of life.
2. Juvenile type: from 4 to 10 years of age.
3. Adolescent type: from 10 years to end of growth⁽⁴⁾.
4. Adult type: Presents after skeletal maturity.

Infantile type:

- The curvature is usually detected by 5 to 6 months of age, but in a few the curve may be found at birth.