

## ***Summary***

- Mediastinal bleeding after CPB is one of the most frequently reported complications of cardiac operations. (*Hartstein, et al: 1996*).

For cardiac anaesthiologist clear understanding of blood coagulation and hemostasis is a must for evaluation and management of bleeding complications. (*Joel.A.Kaplan: 1999*)

Excessive and prolonged bleeding after CPB is associated with a complexity of abnormalities in hemostasis (*Ellison N:1989*) including, effects of E.C.C. on normal hemostasis, preoperative causes of bleeding which may be inherited (*V.J.Martlew:2000*) or acquired (*Coleman RW, et al: 1987*), intra and post operative causes which include:

- insult caused by heart lung machine
  - Platelet dysfunction
  - Clotting factor denaturation
  - Fibrinolysis
  - Hemolysis
- Physical factors
  - hypothermia
  - hemodilution
  - cardiectomy suction
- surgical causes:
  - post operative surgical bleeding and consumption
- pharmacological factors:
  - heparin

- protamine
  - aspirin
  - Ca channel blockers
- Effects of Blood transfusion (*Joel A. Kaplan:1999*)
- The so numerous causes make us very cautious in preoperative investigations to detect any abnormality and to do proper management .
- Monitoring of coagulation starts with clinical evaluation (*Edmunds LH, et al: 1994*). followed by lab. Methods which include:
- \* Tests for vascular and platelet phases (*Avidans MS, et al:1999*)
  - \* Tests for coagulation phase. (*Stuart Elind, et al: 1996*)
  - \* More specific tests for postoperative causes of Bleeding may be required as:
    - tests of specific platelet functions (*Ray MJ, et al:1994*)  
(*Suzuki Y, et al:1998*) (*Shore Lesserson L, et al : 1997*)
    - bioassay of coagulation factors.
    - Heparin levels (*Geory J.N, et al : 1997*)
    - Monitoring of fibrinolysis (*Mossinger H, et al : 1998*)
- After proper diagnosis we should pay attention to various problems and specific treatment to each, regarding importance of correct use of protamine, (*Slaughter T.F., et al: 1996*) antifibrinolytic therapy (*Maineri P:2000*), platelet transfusion, Blood component therapy, (*Blomback B:1996*) (*Pokhilko A.V.:2000*) drug therapy and use of heparin and protamine alternatives in hyper sensitive patients. (*Brister S.J, et al:1995*) (*Wakefield T.W, et al:1995*)