Reoperation for bleeding in cardiac surgery: surgical bleeding or coagulopathy ?

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Background and goal of the study

Reoperation is a risk factor that increases the postoperative mortality and morbidity of cardiac surgery patients. Our aim in this study is to investigate the rates of bleeding-induced reoperation, preoperative and intraoperative risk factors for bleeding, and identify causes of bleeding (surgical or coagulopathic) in our cardiac surgery patient.

Materials and Methods

After receiving approval from the ethics committee of the hospital, perioperative patient data were collected from hospital electronic system and patient's files between jan-oct2017.We included all cases of adult open heart surgery using cardiopulmonary bypass,except for cases of heart failure surgeries. 1200 patients found, 77 patient have undergone at least one operation within 24 h due to postoperative bleeding (%6,4). Patients' comorbidities, haematological drug use, hypothermia, CPB duration, cardioplegia types, bleeding reasons, postoperative complications and mortality information were investigated.We classified the bleeding as surgical and coagulopathic. Haematoma without ongoing bleeding and/or oozing was defined as coagulopathic bleeding, and spesific bleeding requiring suture or clips was defined as surgical bleeding.

Results and Discussion

71 were available in the data of patients. 28(39.5%) patients had surgical bleeding, and 43(60.5%) patients had coagulopathic bleeding. When the variables that might be a risk factor in terms of type of bleeding in preoperative and intraoperative period were examined, no related factors were found (Table 1).

Conclusion

Our aim was to find factors with significant influence on the risk for reoperation due to bleeding after cardiac surgery and evaluate the consequence of the reoperation. The bleeding was differentiated in coagulopathic and surgical. In total, 39,5% of the patients had surgical bleeding.Other series in literature, found 56,4% surgical bleeding ratio(1). It is not possible to distinguish the risk factors because of the low number of patients. However, we can say that the rate of surgical bleeding is lower in our center.

Table 1

	Coagulopathic bleeding	Surgical bleeding	p values
Age (Mean ±std dev)	61,77±14,9	58,82±11	0,32
Gender (F/M)(n)	14/29	10/18	0,49
Elective/emergency(n)	39/4	24/4	0,38
BMI(Mean ±std dev)	25,4±2,7	26,1±2,7	0,69
DM %	25,6	28,6	0,49
HT%	39,5	25	0,15
Acetylsalicylic asit%	34,9	21,4	0,17
Previous MI or PCI%	16,3	10,7	0,38
Clopidogrel%	7	7,1	0,66
Coumadin%	32,6	21,4	0,42
creatinin(Mean ±std dev)	0,98±0,39	0,99±0,44	0,63
Intraoperative tranexamic asit	11,6	28,6	0,11
Initial Hct(Mean ±std dev)	38,2 ±6,5	37,3±7,6	0,67
EF (Mean ±std dev)	50,58±8,6	49,9±10	0,67
Nadir hypothermia	31±1,1	30,93±1,8	0,81
Cardioplegia type(delnido/plegisol)	12/31	9/19	0,70
Cross clamp duration min (Mean ±std dev)	73±19,9	74±28	0,79
CPB duration min(Mean ±std dev)	111±24	111±44	0,99
Procedure (cabg/others)	22/21	15/13	0,54
Postoperative pulmonary complications%	25,6%	28,6%	0,78
Postoperative infection complications%	16,1	32,3	0,43
Postoperative gastrointestinal complications%	0	3,6	0,21
Postoperative cerebrovascular complications%	2,3	3,6	0,75
30 days mortality%	2,3	3,6	0,75

1- Kristensen KL, Rauer LJ, Mortensen PE, Kiildsen BJ. Reoperation for bleeding in cardiac surgery. Interact Cardiovasc Thorac Surg. 2012;14(6):709-13.