with heparin postoperatively (as it seems to be standard scheme in elective on-pump CABG in many centers), where-as one-third administer heparin in a prophylactic dosage already prior to surgery. The overwhelming majority (97%) of respondents did not notice a higher incidence of deep venous thrombosis or pulmonary embolism in OPCAB compared to on-pump CABG. This is in accordance with a recently published study in which the rate of venous thrombosis and pulmonary embolism was low in both OPCAB and on-pump CABG patients [13].

In conclusion, our current study highlights the lack of consensus regarding peri-operative anticoagulation management in OPCAB patients. Indeed, the various attitudes observed among more than 300 European cardiac surgeons definitely demonstrate the need for systematic studies in this field. Our findings are in accordance with other investigators, who demonstrate also widely different anticoagulation regimens in OPCAB patients in North American [14] and Northern European [15] centers.

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References


eComment: HIT in OPCAB surgery

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Given the fact that 78% of the respondent surgeons use low or high molecular weight heparin for perioperative prophylaxis of thrombosis, potential adverse effects of heparin should be considered [1].

As such, thrombocytopenia is a common problem in cardiovascular patients, and heparin-induced thrombocytopenia (HIT) is therefore respec-tively suspected following cardiac surgery. Currently, is it not clear whether OPCAB surgery is associated with the same or a different incidence of HIT I or HIT II in contrast to on-pump cardiac surgery.

It has been suggested that both functional (platelet activation tests) and immunologic assays (antigen assays) are necessary in every patient to establish the diagnosis of HIT. Screening with thromboelastography has been proposed recently [2]. The prevalence of heparin/platelet factor 4 antibodies is currently under investigation. As far as cardiac surgery is concerned, the high prevalence of antibodies to the heparin/PF4 complex after cardiac surgery and the low rate of thromboembolic complications in this population suggest that the antibody alone does not confer an increased risk of thrombotic complications [3]. This is supported by a recent retrospective analysis [4]. The authors concluded that postoperative platelet count fall between days 5 and 10 increases diagnostic specificity for HIT, irrespective of whether this platelet count fall occurs after postoperative platelet count recovery or is superimposed upon persisting postoperative thrombocyto-penia.

A recent survey among 487 cardiac surgery patients with postoperative thrombocytopenia (50% drop in platelet count or absolute count < 100,000/μl) at least one enzyme-linked immunosororbent assay for HIT platelet factor 4 antibodies was performed [5]. Postoperative infections occurred more frequently in HIT+ patients, including sepsis and pneumonia. The HIT+ patients also had a higher rate of renal failure requiring hemodialysis and acute limb ischemia. Thirty-day mortality was significantly higher in the HIT+ group (24.8% vs. 15.2%, P = 0.019). Postoperative HIT emerged as an independent predictor of renal failure (OR = 1.73, P < 0.001) and thromboembolic complications (OR = 2.39, P = 0.02). In conclusion, greater awareness of the potential devastating sequelae may allow earlier detection of HIT in OPCAB as well as in on-pump cardiac surgery.

References

eComment: Is anticoagulation management more significant for patients undergoing off-pump bypass than for those after CABG?

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Actually, this survey confirms that there is a great variation as far as the strategy for OPCAB operations is concerned between several Cardiothoracic Departments [1]. As a result, the observed inhomogeneous practice regarding anticoagulation protocols, antiplatelet therapy, use of antifibrinolytics and the further lack of guidelines for OPCAB reflects the difficulty of even multi-center trials to lead to reliable conclusions [2]. Besides, the fact that a cell-server being a miniature of CPB – is used by 70% of surgeons may explain the report by several studies of comparable results between CABG and OPCAB concerning the incidence of stroke, SIRS, neuro-cognitive disorders, haemorrhage etc. [3]. The fact that 34% of surgeons consider OPCAB as an independent risk factor for the early occlusion of grafts [1], indicates that this surgical method has not yet been proved reliable. Also, it would be interesting to inform us which was the surgical experience (operations/year) of these surgeons. Moreover, the fact that two-thirds (67%) of surgeons support the postoperative administration of antiplatelet agents in combination with low-dose heparine reflects their fear of complications, not only of DVT – whose risk is relatively lower [4], but also the early thrombosis of anastomoses or grafts.

In our opinion, anticoagulation therapy plays a more significant role for the patients undergoing OPCAB compared with CABG, where there is a notable decreased coagulation ‘status’ (decreased platelets levels, hemodilution, consumption of coagulation factors, fibrinolysis, preoperative administration of antiplatelet agents and heparine, etc.) [5]. Consequently, the creation of guidelines concerning the optimal perioperative strategy during OPCAB remains an important aim to improve the early and late results.

References


