IMPACT OF BLOOD SAMPLE-ROUTE ON INTRAOPERATIVE ESTIMATES OF ACTIVATED CLOTTING TIME IN PATIENTS UNDERGOING ON-PUMP CABG

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Aim:
To evaluate the impact of blood sampling site on estimated activated clotting time (ACT) during on pump coronary artery bypass grafting (CABG).

Patients and Method:
The study included 45 patients with coronary artery disease scheduled for CABG. They all underwent a similar standard perioperative anesthetic management. ACT was measured in peripheral arterial and central venous samples, before heparinization (Baseline level), after heparinization (Heparinization Level) and after reversal of heparin by protamine sulphate (rHeparinization level). Heparin was given at a dose of 3 mg/kg after baseline estimation of ACT and repeated to maintain ACT above 400 seconds during bypass period. Two blood samples; a venous and arterial one, were obtained from the same ports for platelet counting.

Results:
Mean estimated ACT was non-significantly longer in venous samples compared to arterial samples in all samples examined. However, there was a high individual variation between ACT estimates on venous and arterial samples conducted on baseline sample. Nine patients (20%) had significantly (p=0.008) longer ACT estimates on arterial sample compared to estimates on venous sample, while the other 36 patients had significantly (p<0.001) longer ACT estimates on venous sample compared to estimates on arterial sample. Depending on calculation of percent of difference between ACT estimates on venous and arterial samples, there were evident variations between samples with non-significantly higher venous ACT estimates. Mean platelet number counted after reversal of heparinization was significantly lower compared to baseline platelet count irrespective of the route of sampling; however, mean platelet number counted in venous samples and arterial samples showed a non-significant increase of platelet count in venous sample both at baseline and after reversal of heparinization compared to arterial sample.

Conclusion:
No significant impact of sample-collecting route, on baseline ACT estimates of patients undergoing on-pump CABG, could be stated, and intraoperative heparinization and reversal of heparinization did not alter such result.