

A Minimal Bypass System Compared to a Traditional Cardiopulmonary Bypass System in Routine CABG Surgery?

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Introduction Cardiac surgery and Cardiopulmonary bypass are known to contribute to postoperative bleeding, hemodilution and defects in the coagulation system. With this in mind, a novel technique based on a Minimal bypass system, Sorin Group Synergy, has been evaluated at our clinic.

Methods The clinical study was a retrospective study comparing group 1: 25 consecutive myocardial revascularization cases with a traditional open system, Sorin Group, phosphorylcholine coated venous reservoir, oxygenator and arterial line filter. Group 2 : 25

consecutive cases using the coated Mini bypass system, Sorin Group Synergy. In both groups

venting and suction were used and normothermic cardioplegia was administered. The prime

volume was kept at 1200 ml for both circuits . There were no significant differences in patient sex, age, weight, height, on-pump time, cross clamp time, euroscore and preoperative

hematocrit level between the two groups.

Twenty four hours postoperative bleeding, delta hematocrit (pre-hematocrit vs. 1 day operative hematocrit) and coagulation function, using the Thrombelastography ROTEM analyzer, were measured.

Results There were no statistically significant differences in the 24 hours postoperative bleeding, 773 ml in the traditional bypass group vs. 741 ml in the Minimal bypass group, delta hematocrit, 1.6 vs. 1.8 and rotations- thromboelastografy data, Clotting Time, Clot Formation Time, Maximum Clot Firmness and Maximum Lysis.

Conclusion Our study demonstrated that the Synergy is equivalent to the traditional open system in terms of postoperative bleeding and coagulation used in routine CABG surgery when priming volumes of both systems are the same. The next step is to continue the study

using Cell saver to manage suction blood and also use a lower prime Mini bypass system with

the autologous blood prime to further reduce hemodilution.