THE OCTOPUS™ II STABILISER: PRELIMINARY BIOCHEMICAL AND NEUROPSYCHOLOGICAL OUTCOMES FROM A PROSPECTIVE RANDOMISED TRIAL.

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Introduction: The aim of this study was to determine if coronary artery bypass graft (CABG) surgery performed utilising the Octopus II retraction system provides myocardial and cerebral protection comparable to traditional CABG surgery utilising cardiopulmonary bypass (CPB).

Methods: Elective patients requiring surgery for double or triple vessel disease were randomised to receive either conventional CABG with CPB (n=10) or off-pump CABG using the Octopus II retraction system (n=9), after receiving institutional approval and written consent. Exclusion criteria included previous cardiac surgery, recent myocardial infarction, and previous cerebrovascular disease. Troponin T was measured preoperatively, and at 2, 4, 6, 8, 10, 12, 24, and 72 hours after initiation of grafting. Neuropsychological assessments (10 measures) were performed in the week prior to surgery and one week after surgery.

Results: Troponin T release was reduced in the Octopus II patients at all time points (repeated measures ANOVA p=0.091), reaching significance at 12 hours (p=0.038). Other factors (composite clinical end point (prolonged LOS or ICU stay or 30d mortality), infarction, and intubation time) did not show any significant differences. Neuropsychological evaluation identified a higher incidence of decline on the Digit Symbol sub-test (WAIS-R) in patients undergoing traditional bypass compared to Octopus II patients (40% vs 0%, p=0.033).

Conclusions: Decreased Troponin T release suggests a myocardial benefit for the Octopus II off-pump procedure. Demonstration of a neuropsychological benefit remains to be determined.