Reviewer's report

Title: Myocardial Revascularization using on-pump Beating Heart among patients with Left Ventricular Dysfunction

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Reviewer: IMAD TABRY

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This is a very interesting article originating from an excellent cardiac surgical team at Makassed Hospital in Jerusalem.

There are quite a few minor essential revisions to be made namely spelling mistakes ("obsticale "on page 8, the incidence of hospital mortality was "more" among our patients on page 3, etc...) . There are also some incongruities, such as: "as a rule, grafting the LAD by the left mammary artery was the first to be performed" followed by "however, to avoid stretching and kinking of the LIMA, grafting of the diagonal followed by RCA and circumflex artery was usually performed, leaving LAD graft to be performed lastly" on page 5)....

It is also highly advisable to use a simplified abbreviation system from the start of the article, such as OPCAB (for off-pump), ONCAB/BH (on-pump beating heart) and CONCAB (conventional non-beating heart on-pump).

Most importantly, the authors also repeatedly use the term "complete revascularization" when in fact there was incomplete revascularization in 28% of their ONCAB/BH patients and a dismal 54% incomplete revascularization in their OPCAB patients. Moreover, in their patient population whose average age is 58 only 75% received one mammary artery graft, and less than 2% received 2 mammary grafts. Finally it appears that the surgical team was quite reluctant to bypass right coronary arteries and circumflex artery branches in their OPCAB surgeries despite the availability of the "starfish" positioning device ("we advocate minimal manipulation during surgery which obviously lead to a lesser number of grafts used and incomplete revascularization"). All these shortcomes put together are probably responsible for the 8% and 6% mortalities reported in the article, numbers that far exceed in my opinion the norm had complete revascularization been done and both IMAs used as needed. It is advisable to explain the reason for these shortcomes rather than compare these results to the "litterature" only.

For those who have mastered OPCAB it has become obvious that maintenance of excellent hemodynamic stability during manipulation of the heart by the other (very important) member of the team, the anesthesiologist, is paramount to achieving complete revascularization leading to a low mortality. For the 20% or so "OPCAB surgeons" worldwide the only contraindication for OPCAB are: severe hemodynamic instability (cardiogenic shock and the likes), severe pectus excavatum, and very large hearts in patients with chronic atrial fibrillation. It appears, from reviewing this honest report, that its major shortcome is the lack of
solid anesthesia support.

One final remark pertains to the Conclusion paragraph which is repetitive and should be limited to no more than one page. The list of References is also too long and should be trimmed to represent the 10 most informative and relevant ones.

**Level of interest:** An article of importance in its field

**Quality of written English:** Needs some language corrections before being published

**Statistical review:** No, the manuscript does not need to be seen by a statistician.

**Declaration of competing interests:**

I declare that I have no competing interest