Reviewer's report

**Title:** Evaluation of left ventricular contractility in endotoxin-induced shock using arterial dP/dtmax

**Version:** 1  **Date:** 8 November 2011

**Reviewer:** German Gonzalez

**Reviewer's report:**

Manuscript: Evaluation of left ventricular contractility in endotoxin-induced shock using arterial dP/dtmax

Comments to Authors

In this manuscript Morimont P et al investigated whether arterial dP/dt obtained by using fluid filled catheters can be used to assess LV contractility status in an experimental model of shock induced by lipopolysaccharide administration in pigs. They found a significant correlation between arterial dP/dtmax and end-systolic elastance (Ees) as well as arterial and LV dP/dtmax. This correlation was even better when adequate vascular filling was achieved. However, correlation between LV dP/dtmax and Ees did not significantly change when adequate vascular filling was achieved. The main weakness I found in the manuscript is the originality. Previous studies performed in patients already showed that Aortic dp/dt(max) and LV dp/dt(max) are closely correlated through the vascular loading properties and LV dp/dt(max) can be derived from Ao dp/dt(max), which has potential as a noninvasive method of determining LV contractility (Masutani et al Circ J 2009; 73(9):1698-704). Moreover, De Hert SG et al (J Cardiothorac Vasc Anesth 2006; 20(3):325-30) also showed that changes in arterial dP/dtmax and LV dp/dt max are positive correlated which arterial dP/dtmax can be used as estimation of cardiac contractility. Thus, the only new information of the manuscript is the match of a load independent index of systolic performance (Ees) with arterial dP/dtmax.

Major Compulsory Revisions

1) Results section (Page 5): During state of shock Ees, arterial and LV dP/dt max decreased. Were those differences statistically significant?

2) Again, after catecholamine infusion the increase of those parameters is statistically significant?

3) To show LV performance parameters as figures would be easier for readers for understanding the results specifically pre and post treatment.

4) Did the authors match arterial dP/dtmax with other load independent indices such as dP/dtmax-end diastolic volume relation and preload-recruitable stroke work (PRSW)?
**Level of interest:** An article of limited interest

**Quality of written English:** Acceptable

**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 interests