HeartWare ventricular assist device experience in the real world

Prashant Nanasaheb Mohite, Aron Frederik Popov*, Anton Sabashnikov and Andre Ruediger Simon

Department of Cardiothoracic Transplantation and Mechanical Support, Royal Brompton & Harefield NHS Trust, London, UK

* Corresponding author. Department of Cardiothoracic Transplantation and Mechanical Support, Royal Brompton & Harefield Hospital, Harefield Hospital, Middlesex, London UB9 6JH, UK. Tel: +44-7930411513; fax: +44-1895828715; e-mail: a.popov@rbht.nhs.uk; popov@med.uni-goettingen.de (A. F. Popov).

Received 13 April 2013; accepted 17 June 2013

Keywords: Ventricular assist device • HeartWare • Thrombosis

We congratulate Wu et al. [1] for sharing their experience with the HeartWare ventricular assist device (HVAD), which is the largest published series so far. They were successful in demonstrating improvement not only in haemodynamic parameters but also in renal and liver function after device implantation. In comparison with previously published multicentre trials and single-centre experiences about the use of the HVAD [2–4], this series is unique due to liberalization of inclusion criteria, i.e. inclusion of destination therapy patients, younger (<18 years) and elderly patients as well as inclusion of biventricular support with the HVAD (BVAD) patients. This has given the ‘real world’ touch to this experience. Also, the authors have stratified the outcomes according to subgroups in patients’ age, Interagency Registry for Mechanically Assisted Circulatory Support (INTERMACS) profiles and indication for support, providing insight into the outcomes in these particular subgroups. For example, the authors could show that outcomes in elderly patients (>65 years) are similar to those in the 18–65 age group. Another noteworthy finding is the significant reduction in mean pulmonary vascular resistance (PVR) from 9 to 3 Wood units, which demonstrates the efficacy of LVADs, in this case HAVD, in reducing PVR and thus making patients, who were denied heart transplantation (HTx) previously due to high PVR, suitable for HTx.

The series might be criticized for survival outcome (67% at 1 year) which is lower compared with the published 84–86% [2–4]. However, the stringent patient inclusion criteria in the previous trials differ markedly from those in the present series. Specifically, implantation for destination therapy (59% survival at 1 year) and BVAD (47% survival at 1 year) significantly influence their results and are responsible for overall lower survival. Also, the proportion of patients in INTERMACS level I and II published trials is only 22–29%, while it makes up two-thirds of the patients in this series. However, a relatively poor survival, 67% at 3 months and 67% at 1 year (suggestive of only early deaths in this group), is observed in INTERMACS level IV patients in this series. It will be much appreciated if authors could explain these results.

Thrombosis in the LVAD pumps is an infrequent but annoying complication and the HVAD is not an exception with the reported incidence of pump thrombosis ranging from 2.1 to 9% [2–4]. In the present series, the authors report device malfunctions in 12 (8.5%) cases. There is no consensus about the treatment of device thrombosis, with thrombolytic therapy being favoured as a first-line treatment by many, followed by device exchange which is associated with high mortality [5, 6]. Taking into consideration the large size of the cohort, it would be insightful if the authors could comment on their institutional protocol for the management of device thromboses especially whether thrombolysis was tried before device exchange and the success rate of both thrombolysis and surgery for device exchange.

REFERENCES