

17th European Heart Disease and Heart Failure Congress &

2nd International Conference on

Cardiovascular Medicine and Cardiac Surgery

March 15-17, 2017 London, UK

Benefits of sildenafil to patients suffering from severe pulmonary hypertension secondary to mitral stenosis undergoing mitral valve replacement

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Introduction & Objective: Sildenafil (phosphodiesterase inhibitor type 5) has been successfully used to treat primary pulmonary hypertension. Mitral valve disease notably stenotic lesion is a long standing disease, in developing countries late detection results in increase association with severe secondary (PAH) pulmonary hypertension. Right ventricular (RV) failure is a leading cause of increased morbidity and mortality of patients with severe pulmonary hypertension undergoing mitral valve surgery. The study aims to confirm the effectiveness of preoperative oral sildenafil in decreasing the incidence of RV failure in this category of patients.

Methods: Eighty patients scheduled for mitral valve replacement surgery with severe PAH, RV systolic pressure (RVSP) ≥ 60 mmHg were included in the study. Patients were randomized into two groups: Gr C - placebo (N=40), and Gr S - Sildenafil (N=40) with oral sildenafil 25 mg eight hourly for 48 h before surgery with the last dose given 25 mg in 10 ml via nasogastric tube after induction of anesthesia. In both group the need for inotropes was recorded and doses were titrated to achieve hemodynamic stability during and after cardiopulmonary bypass (CPB).

Results: Pulmonary artery pressure was significantly reduced in the sildenafil group. Ventilation time was less in the sildenafil group but without statically significant value, CPB time was significantly lower in the sildenafil group ($p=0.05$) and postoperative ITU stay was significantly lower ($P<0.001$) in sildenafil group. The requirements of inotropes notably dobutrex and milrinone were significantly more with placebo group compared to sildenafil group.

Conclusions: It is concluded that sildenafil is safe and effective in reducing severe pulmonary hypertension when given to patients prior to the mitral valve replacement surgery; which facilitated weaning from CPB.

Biography

Sherif A S A Mansour is a Consultant of Cardiothoracic Surgery in Ministry of Health Hospitals, in addition to working as a Surgeon in Royal Stoke Hospital, Stoke-on-Trent, UK. He works at the Ain Shams University in Cairo, Egypt as a Senior Lecturer. He is subspecialized in Off Pump CABG, minimal invasive cardiac surgery with fantastic results and many contributions to various cardiac surgery centers in the Middle East, Asia and Africa. He shared in the establishment of more than one cardiac surgery center across Egypt with training of the staff and the surgical assistants and registrars. He also had publications in the peer reviewed journals and contributions in some published cardiothoracic books with many contributions at international conferences across Europe and Asia. Recently, he started to explore the field of Robotic Heart Surgery with strong steps toward achieving his goal of mastering it.

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