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Survival analysis and post-operative complications after ventricular assist device implantation: Prognostic value of INTERMACS scale

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Introduction: Ventricular assist devices (VADs) have been proven to be effective in improving survival and quality of life in patients with refractory heart failure. However, outcomes depend on a variety of pre-operative parameters. This study evaluates retrospectively patients' profiles, clinical outcome, post-operative complications and mortality in patients who underwent VAD implantation in our center; taking into account pre-operative INTERMACS (The Interagency Registry for Mechanically Assisted Circulatory Support) levels.

Methods: Between August 2010 and March 2015, 104 patients underwent VAD implantation in our university hospital. INTERMACS profiles were as follow: Level 1 in 27 patients, level 2 in 20 patients, level 3 in 27 patients, level 4 in 25 patients, level 5 in 4 patients and level 6 in 1 patient respectively. Patients were divided into 3 groups: Group A included 27 patients at INTERMACS level 1, group B included 47 patients at INTERMACS level 2/3 and group C included 30 patients at INTERMACS Level 4/5/6. Patients' characteristics pre-VAD implant, incidence and time of onset of post-operative complications and mortality were compared between groups.

Results: Sepsis was the most common post-operative complication after VAD implantation. Total mortality was higher in group A compared to group B ($p=0.002$) and group C ($p=0.005$), with no significant difference between groups B and C ($p=0.902$). Predictors of total mortality were pre-operative high CVP ($p=0.008$), high systolic PAP ($p=0.007$).

Conclusion: INTERMACS scale correlates with outcome after VAD implantation in our single center study. Optimization of pre-operative volume status, preload, right heart function is recommended to lower the total mortality in such patients.

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An insight to the cardioprotective attributes of herbal extracts against doxorubicin induced toxicity on mammalian cell line

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Doxorubicin (DOX) often prescribed for anticancer medication once, confronted a restricted clinical use for its dose limited cardiotoxic nature by stimulating oxidative stress in the tissues. The reduced antioxidative defence system and elevated levels of intracellular ROS conclude in terms of cell injury through one or the other mechanisms. Medicinal plants are a rich natural source of secondary metabolites (flavonoids) that have known antioxidant characteristics. The objective of the study was to test the extracts of certain medicinal herbs for their cardio protective properties against doxorubicin-arbitrated toxicity. At first, antioxidant capacities of these extracts were determined by DPPH and Ferric reducing/antioxidant power assay. *In vitro* MTT assay followed by an assessment of the cytoprotective activity of the crude extracts on DOX-treated mammalian cell line were evaluated. Levels of intracellular ROS were determined by using a peroxide sensitive fluorescent probe, 2,7 dichlorofluorescein diacetate. Lactate dehydrogenase (LDH) and creatine kinase (CK) levels were used as a means of cardiac tissue damage. The levels of cytochrome c, caspase 9 and caspase 3, were measured by Western blotting. It was observed that the aqueous extracts were modulating the toxic effects of DOX on cardiotoxicity.

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