

Current status of clinical use of pulsatile ventricular assist systems in Japan

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In Japan, five types of ventricular assist systems, including the government-approved National Cardiovascular Center type and the Tokyo University type, were applied to 221 patients as of May 31, 1993. Adult-sized ventricular assist systems were used in 213 patients and a pediatric one in 8. The major primary diagnosis was ischemic heart disease (51.6%). Sixty-four patients in cardiogenic shock with acute myocardial infarction were treated using a ventricular assist system, and the results were fairly good. The predominant indication was failure to be weaned from cardiopulmonary bypass (70.1%). Four patients were applied to bridge to heart transplantation and actually one case transplanted successfully. Left ventricular assist was performed in most patients (82.4%). The duration of ventricular assist system application ranged from 1 hour to 119 days and the mean duration was 7.4 ± 12.2 days. Duration of circulatory support had no relation to the results, and the longest support in survival was 119 days and this cases was performed as a bridge use. The weaning rate was 48.4%, and the survival rate was 26.2%. Main causes of death were heart failure, including unrecoverable heart failure, and multiple organ failure. It should be kept in mind that the decision to use a ventricular assist system should be made quickly, before major organs, including the heart itself, are irreversibly damaged.