

Echocardiographic findings in children with brain death: a one center experience

Pek S.(1), Skaric I.(2), Tokic Pivac V.(2), Herceg-Cavrak V.(2,3)

Primary Health Center Zagreb West, Zagreb, Croatia (1)

Children's Hospital Zagreb, Zagreb, Croatia (2)

Faculty of Dental Medicine and Health, Osijek, Croatia (3)

INTRODUCTION: Brain death is commonly associated with left ventricular systolic dysfunction by some mechanisms not yet completely understood. The aim of this study is to assess echocardiographic features found among organ donors in our hospital.

METHODS: This retrospective study was conducted between October 2001 and December 2018. A total of 20 patients under 18 years old with declared brain death were identified. The mean age of the donors was 8.8 years (range 10 months to 17 years), and 14 patients (70%) were male. Only one patient had previously known cardiac disease, VSD, so his heart was not accepted for heart donation. An adequate transthoracic echocardiogram was obtained in 18 potential organ donors (90%) and all of them were performed before evaluation protocol confirmed brain death.

RESULTS: Echocardiogram was completely normal in 2 patients (10%) and in 11 (55%) patients trace valve regurgitation was found. One patient had moderate mitral and tricuspid regurgitation. Minimal pericardial effusion exhibited 4 (20%) patients. Two patients had mild septal dyskinesia with normal left ventricular ejection fraction.

Global hypokinesia with ejection fraction less than 55% was demonstrated in 5 (37%) and only one patient's ejection fraction was lower than 45%. A total of 14 hearts were harvested for transplantation (70%) after confirming brain death, including a patient with lowest ejection fraction and successfully transplanted.

CONCLUSION: Mild left ventricular systolic dysfunction occurs often in children with brain death and our overall results suggest that most of these patients could be a heart donor.