Outcome of neonates with vein of Galen malformation presenting with severe heart failure: a case series

E. Picconi[1], G. De Rosa[2], T. C. Morena[1], A. Tempera[3], E. Luca[1], G. Conti[1], M. Piastra[1]

[1]Pediatric Intensive Care Unit, Catholic University "A. Gemelli" Hospital, Rome, Italy
[2]Department of Pediatrics, Catholic University "A. Gemelli" Hospital, Rome, Italy
[3]Neonatal Intensive Care Unit, San Camillo-Forlanini Hospital, Rome, Italy

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INTRODUCTION

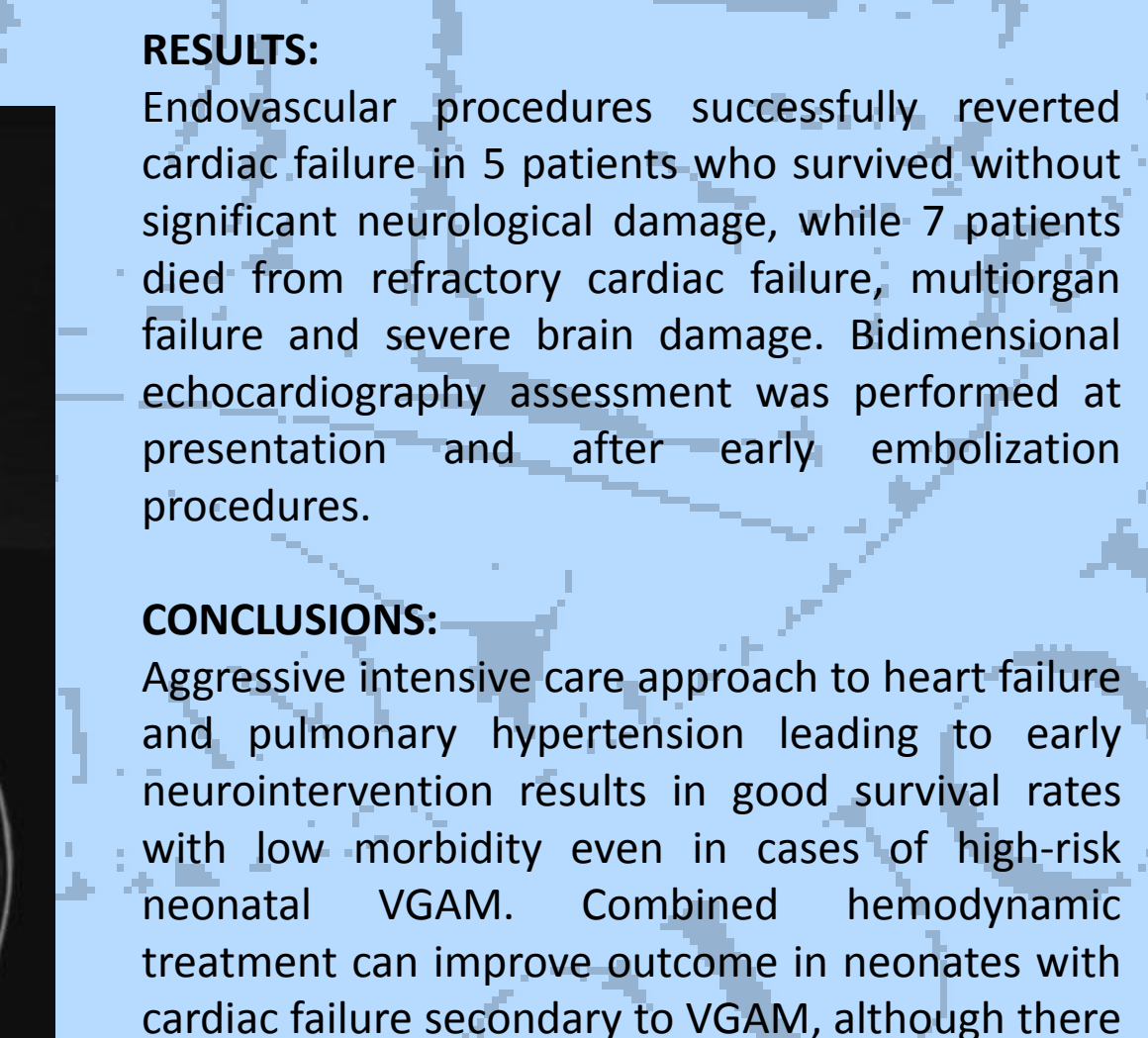
Neonatal presentation of vein of Galen aneurysmal malformations (VGAMs) complicated by cardiac failure and pulmonary hypertension is frequently associated with a poor prognosis. Interventional neuroradiology with embolization can offer a chance for survival, although neurological damage can represent a limitation.

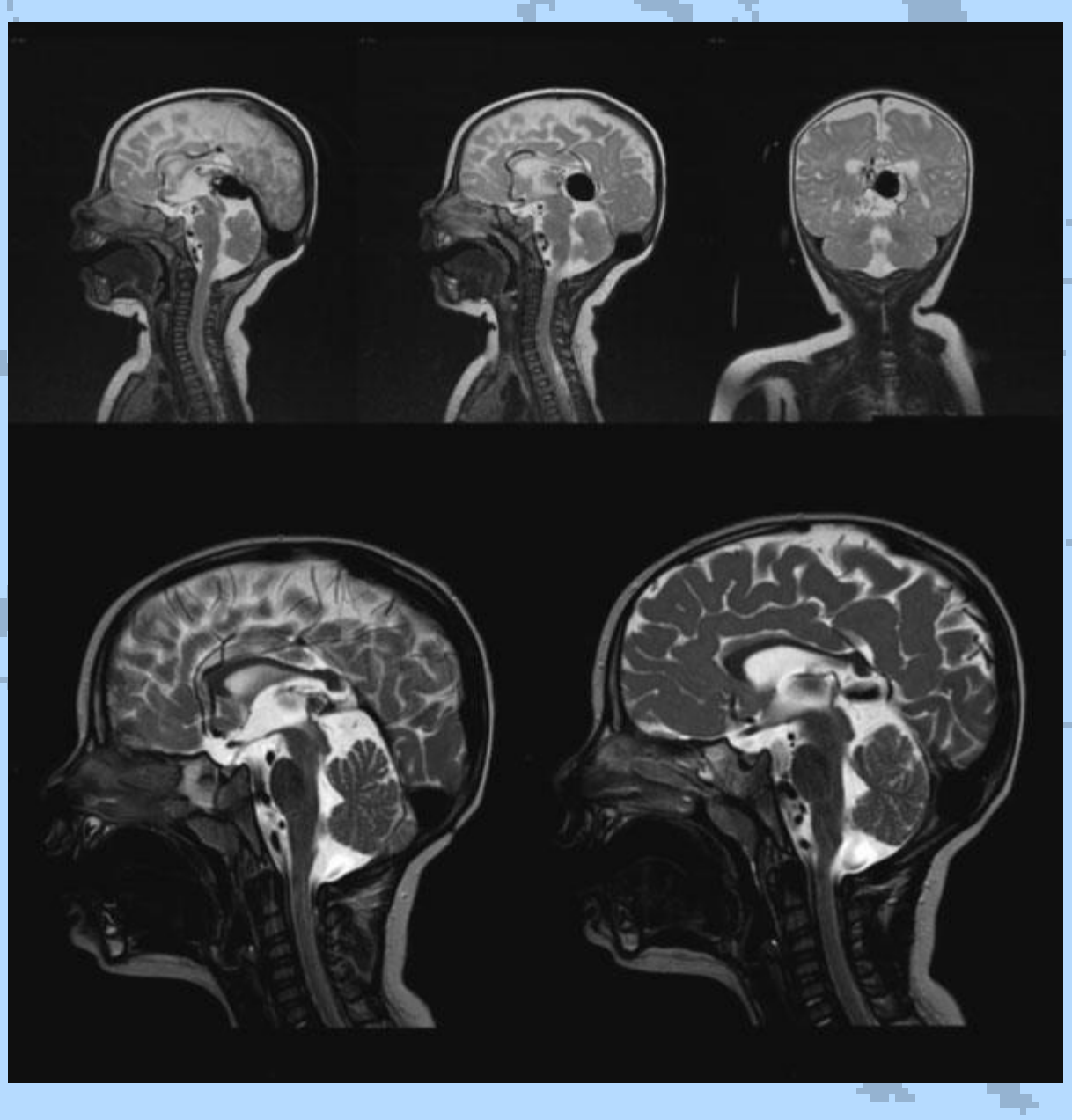
OBJECTIVE

To determine if aggressive intensive care of cardiac failure before urgent embolization can influence morbidity and mortality.

MATHERIALS AND METHODS

Twelve infants (7 boys, 5 girls, mean gestational age 36+5 w) were diagnosed with symptomatic vein of Galen malformations in the neonatal period during the period 2000 to 2014. Due to high output cardiac failure, endovascular treatment was attempted as soon as cardiorespiratory stabilization was achieved.





RESULTS:

Endovascular procedures successfully reverted cardiac failure in 5 patients who survived without significant neurological damage, while 7 patients died from refractory cardiac failure, multiorgan failure and severe brain damage. Bidimensional echocardiography assessment was performed at presentation and after early embolization procedures.

CONCLUSIONS:

Aggressive intensive care approach to heart failure and pulmonary hypertension leading to early neurointervention results in good survival rates with low morbidity even in cases of high-risk neonatal VGAM. Combined hemodynamic treatment can improve outcome in neonates with cardiac failure secondary to VGAM, although there is the risk of precipitating systemic hypoperfusion and renal failure. A moderate prematurity may not prevent both interventional approach and good outcome.