

Pharmacological management of paediatric heart failure: results of a European survey

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Background: Paediatric heart failure (HF) has an important economic and social impact in public health. Drugs acting on the renin-angiotensin system are regarded as mainstay to lower the burden of HF for patients and families. A safe and efficient use especially in young children has been debated since several years and remains a challenge for physicians.

Aim: To characterise the different therapeutic strategies for the management of paediatric HF that are currently practiced across Europe with special focus on the use of Angiotensin Converting Enzyme Inhibitors (ACE-I).

Methods: A Europe-wide web-based survey was developed in the context of EU's Seventh Framework Programme under grant agreement n°602295 using standard recommendations for survey design. The questionnaire consisted of 23 questions addressing different aspects of drug therapy for HF in children. Use patterns of ACE-I i.e. dosage by age group, effectiveness and toxicity assessment according to HF aetiology were investigated. Clinicians from 204 different hospitals of 39 European countries were invited via e-mail to participate.

Results: Survey was conducted between January and May 2015 achieving a response rate of 50%. All participants reported using ACE-I for the management of at least one type of HF. Captopril was preferred for newborns (73%) and infants and toddlers (66%), whereas enalapril was the first choice in older age groups (57% for children, 59% for adolescents). Lack of consensus among survey participants was observed regarding benefits of drug treatment depending on aetiology and stage of HF or concerning the optimal ACE-I maintenance dose. Regarding safety parameters, up to 74% of the participants claimed to follow serum creatinine increase for decision-making when deterioration of renal function is detected. Selection of cut-off points for serum creatinine differed.

Conclusions: This survey provides an overview of the clinical treatment routine of paediatric HF across Europe. ACE-I seem to be a crucial part of the treatment strategies. Nevertheless, marked variability exists regarding the effective and/or safe use of this drug class. The results may help to start a consensus discussion about a standardized use of ACE-I treatment to provide guidance for an efficient and safe use of ACE-I in children with HF.