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CLINICAL RESEARCH

Syncope unit in the paediatric population: A single-centre experience



*Unité de prise en charge des syncopes dédiée à la population pédiatrique :
expérience monocentrique*

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KEYWORDS

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Summary

Background. — Syncopes are frequent in the paediatric population. Most are benign, but rare cases are caused by cardiac life-threatening diseases. Syncope units developed in the adult population have demonstrated improvement in evaluation and treatment, with a reduction in hospitalization.

Aims. — We report our experience of paediatric syncope management in a dedicated unit, and analyse the value of different elements in the identification of cardiac causes.

Methods. — This prospective study included 97 consecutive patients (mean age: 12.1 ± 3.3 years) referred between January 2011 and June 2013 to a syncope unit with a paediatric cardiologist, a nurse, a physiotherapist and a psychologist. Patients were classified into diagnostic categories after an initial evaluation that included history, physical examination, electrocardiography, echocardiography and Holter monitoring.

Results. — The most common diagnosis was neurocardiogenic syncope ($n = 69$, 70.4%). Fifty-two cases (81.3%) had no or less recurrence after specific management that included physiotherapy and psychological support (follow-up: 11.5 ± 5.4 months). Psychogenic pseudosyncopes

Abbreviations: CT, computed tomography; LOC, loss of consciousness; MRI, magnetic resonance imaging; NCS, neurocardiogenic syncope; PPS, psychogenic pseudosyncope.

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affected 20 children (20.6%). Two patients had epileptic seizures. There were five cases of cardiac syncope (5.1%): two long QT syndromes and a catecholaminergic polymorphic ventricular tachycardia received beta-blockers; two atrioventricular complete blocks required pacemakers. One case was of indeterminate cause and received an insertable loop recorder after exhaustive investigations. Exercise-induced syncopes were significantly associated with cardiac origins ($P=0.003$), such as electrocardiographic abnormalities ($P<0.001$), whereas echocardiography was not contributive.

Conclusion. – Syncope units in the paediatric population may be useful in the diagnostic process, to help identify rare cardiac aetiologies, and could decrease recurrence through specific management.

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MOTS CLÉS

Syncope ;
Enfants ;
Adolescents ;
Canalopathies ;
Tilt test

Résumé

Contexte. – Les syncopes sont un problème fréquent en pédiatrie ; la plupart sont bénignes mais quelques cas sont dus à des pathologies cardiaques potentiellement menaçantes. Les unités syncope développées chez l'adulte ont montré un bénéfice dans la prise en charge diagnostique et thérapeutique en réduisant les hospitalisations.

Objectifs. – Nous rapportons notre expérience de prise en charge des syncopes en pédiatrie par une unité spécialisée en analysant la valeur de différents éléments pour discriminer les causes cardiaques.

Méthodes. – Cette étude prospective a inclus 97 patients (âge moyen : $12,1 \pm 3,3$ ans) consécutivement adressés entre janvier 2011 et juin 2013 à une unité impliquant cardiologue pédiatrique, infirmière, kinésithérapeute et psychologue. Les patients étaient classés en catégories de diagnostic après évaluation initiale comprenant histoire médicale, examen physique, électrocardiogramme, échocardiographie et holter rythmique.

Résultats. – Le diagnostic le plus fréquent était les syncopes neurocardiogéniques : 69 patients (70,4 %). Cinquante-deux cas (81,3 %) présentaient moins de récurrences après prise en charge spécifique comprenant kinésithérapie et support psychologique (suivi de $11,5 \pm 5,4$ mois). Les pseudosyncopes psychogéniques représentaient 20 enfants (20,6 %). Deux patients présentaient une épilepsie. Les syncopes cardiaques comprenaient 5 cas (5,1 %) : 2 syndromes du QT long et une tachycardie ventriculaire catécholergique traités par bêtabloquants, 2 blocs atrio-ventriculaires complets nécessitant un pacemaker. Un cas de syncope inexpliquée fut appareillé d'un holter implantable. Les syncopes à l'effort étaient significativement associées à une origine cardiaque ($p=0,003$), comme les anomalies électrocardiographiques ($p<0,001$) alors que l'échocardiographie s'avérait non contributive.

Conclusion. – Une unité syncope pédiatrique apparaît intéressante dans la démarche diagnostique pour identifier les rares étiologies cardiaques et pourrait réduire les récurrences via une prise en charge spécifique.

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Background

Syncope is defined as a "transient loss of consciousness (LOC) due to transient global cerebral hypoperfusion characterized by rapid onset, short duration and spontaneous complete recovery". Presyncope is "a state that resembles the prodrome of syncope, but which is not followed by LOC" [1].

Syncope is a common problem in children and adolescents; nearly 15% of this population will have at least one syncopal event before the age of 18 years, with a female predominance and an incidence peak in those aged 15–19 years [2,3]. The recurrence rate ranged from 33% to 51% in a 5-year follow-up [4]. While most cases of syncope

are benign, around 5% are the initial manifestation of a life-threatening cardiac disease [5,6]. Thus, diagnostic evaluation has to fulfil two nearly opposite objectives: to reassure large numbers of patients and anxious parents, without missing rare cardiac causes that have to be recognized promptly as they can be fatal.

Issues are similar in the adult population, and led to the development of specific syncope units, which have demonstrated improvement in the diagnostic and management processes, with reductions in duration of hospitalization and favourable long-term outcomes [7,8].

In this article, we aim to report our experience of syncope evaluation and treatment in children and adolescents in a dedicated syncope unit, with a focus on the specific

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