












## Pedijatrijska elektrofiziologija srca Pediatric electrophysiology

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Za većinu srčanih aritmija antiaritmici imaju skromnu učinkovitost. Osim toga, antiaritmici su lijekovi s brojnim nuspojavama, često proaritmiskim učinkom i dugoročno visokim troškovima liječenja. U posljednja dva desetljeća invazivna elektrofiziolgija (EF) i radiofrekventna ili kriobalacija postale su uobičajene i prve terapijske opcije zbog visoke stope uspješnosti, te vrlo rijetkim komplikacijama.<sup>1,2</sup> Pedijatrijska EF je u uskoj vezi s adultnom EF, no ipak postoje stanovitve razlike u pripremi i pristupu kao i u karakteristikama aritmogenog supstrata. Djeca koja prolaze kroz invazivnu EF predstavljaju jedinstvenu populaciju s nešto drugačijim potrebama nego odrasli pacijenti koji prolaze slične procedure. Program pedijatrijske elektrofiziolgije u Kliničkom bolničkom centru Sestre milosrdnice službeno je započeo u ožujku 2018. godine u suradnji Klinike za pedijatriju i Klinike za bolesti srca i krvnih žila. U 7 mjeseci programa, 23 djece (14 dječaka, 9 djevojčica) je invazivno aritmološki zbrinuto. Nakon EF ispitivanja u 20 pacijenata uspješno je učinjena radiofrekventna kateterska ablacija te u jednog pacijenta kriobalacija. Kod dva pacijenta učinjeno je samo EF ispitivanje – jedno dijete s benignim akcesornim putem i jedno dijete s ventrikulskim ekstrasistolama s izvorištem u lijevom aortnom kuspisu u samoj blizini ušća lijeve koronarne arterije. Kod 18 pacijenata dijagnosticirana je supraventrikulska tahikardija (13 akcesornih puteva i 5 atrio-ventrikulskih nodalnih kružnih tahikardija). Kod dva pacijenta radilo se o ventrikulskim ekstrasistolama (jedne iz izlaznog trakta desnog ventrikula i jedne parahisalnog). Sva 23 invazivna EF zahvata izvedena su korištenjem 3D navigacijskog sustava (*Ensite Precision*) i kateterskim elektrodama primjerenim za djecu (5F kada je bilo potrebno). Najmlađe dijete s lijevim lateralnim akcesornim putem i AVRT imalo je tri godine. 17 procedura izvedeno je kompletno bez korištenja rendgenskog zračenja, dok je kod 6 pacijenata minimalno korištena dijaskopija radi transseptalne punkcije i kod jednog djeteta potrebom za koronarnom angiografijom. Nisu bile zabilježene nikakve komplikacije. U svrhu smanjivanja mogućih komplikacija mnogo je zahtjevnih i specifičnih sestrijskih intervencija koje također neposredno utječu na ishod invazivnog postupka.

For most cardiac arrhythmias, antiarrhythmic drug therapy has only modest effectiveness. In addition to that, antiarrhythmic drugs have numerous side effects, proarrhythmic effects and they have very high cost in the long term. In the last two decades invasive electrophysiology (EP) and radiofrequency or cryo catheter ablation have become common and emerged as the first therapeutic option due to high success and low complication rate.<sup>1,2</sup> Pediatric EP is closely related to the adult EP, but there are some very important differences in preparation and approach as well as characteristics of arrhythmogenic substrates. Children undergoing invasive EP represent a unique population different from adult patients undergoing similar procedure. The pediatric EP programme in University Hospital Centre "Sestre milosrdnice" started officially in March 2018, in collaboration of Pediatrics and Cardiology Clinics. In last 7 months, 23 (14 male, 9 female) pediatric patients underwent EP procedure. After EP study 20 patients successfully underwent radiofrequency catheter ablation and one patient underwent cryoablation. Two patients underwent EP study only – one with benign accessory pathway and one with PVCs that originate from left coronary cusp near the ostium of left coronary artery. 18 patients were diagnosed with supraventricular tachycardia (13 accessory pathways and 5 with atrioventricular nodal reentry tachycardia). 2 patients were diagnosed with PVCs (one from RVOT and one parahisian). All 23 EP studies were performed with 3D mapping system (*Ensite Precision*) and catheters suitable for children (5F catheters when needed). Youngest child with left lateral accessory pathway and AVRT was three years old. 17 procedures were performed completely without the use of fluoroscopy, while in 6 cases minimal fluoroscopy time was used for the transseptal puncture and in one case coronary angiography had to be performed. No complications occurred. Precisely because of the complexity, standardization of the procedures and the use of custom protocols increases the quality of care and pediatric patient safety and improve ablation outcome.

### LITERATURE

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