


## Iskustva s intravaskularnim metodama procjene lezija u Kliničkoj bolnici Dubrava

### Experience with intravascular stenosis assessment in University Hospital Dubrava

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**Uvod:** Angiografska procjena stenozе dio je svakodnevne prakse, međutim metode intravaskularne procjene lezije značajno pridonose boljim kliničkim ishodima za bolesnike, što je potvrđeno u brojnim studijama te su dio vrijedećih smjernica za revaskularizaciju srca. Intravaskularna ultrasonografija (IVUS) je postupak kojim se koriste specijalizirani intravaskularni kateteri kako bi se karakterizirala morfologija plaka, duljina, kao i značajnost lezije računanjem minimalne površine lumena (MLA), a daje i podatke o apoziciji stenta, restenozama, te morfologiji bifurkacijskih lezija. Metode procjene koronarne perfuzije (FFR, iFR) su metode koje koriste mjerenje promjene tlaka na mjestu stenozе specijalnim žicama koristeći se determiniranim „cut-off“ vrijednostima za stentiranje.<sup>1,2</sup>

**Rezultati:** Predstavljamo podatke o uporabi IVUS-a i FFR/iFR u Kliničkoj bolnici Dubrava tijekom razdoblja od siječnja 2016. do siječnja 2018. godine. Kod ukupno 31 bolesnika je učinjen IVUS, a vodeća indikacija bila je procjena značajnosti stenozе (61%). Glavnina postupaka učinjena je radi procjene lezija na deblu lijeve koronarne arterije i ostijalne LAD (68%). Četiri bolesnika su reklasificirana za kiruršku intervenciju, kod 16 bolesnika je učinjena PCI, a kod 11 bolesnika nije učinjena intervencija. Srednja vrijednost MLA kod stentiranih bolesnika iznosila je 3,29, što je uvjetovalo adekvatan izbor stenta i kasnije provjeru primjerene apozicije. Tijekom praćenja nije zabilježen smrtni ishod, tek jedna potreba za reintervencijom zbog restenozе, bez zabilježenih drugih MACE događaja. U istom periodu učinjeno je 20 FFR/iFR procedura. Svi su bolesnici imali stabilnu koronarnu bolest srca, prosječno se analizirano 1,9 arterija po bolesniku, a najzastupljenija u analizi bila je LAD (48%). Ukupno se stentiralo 55% bolesnika, za koje je srednja vrijednost iFR iznosila 0,82, dok je kod bolesnika koji nisu stentirani iznosila 0,93. U razdoblju praćenja nisu bilježeni veliki neželjeni događaji, kao niti pogoršanje anginoznih tegoba.

**Zaključak:** IVUS i FFR/iFR komplementarna su metoda procjene i karakterizacije stenozе, pogotovo LM/pLAD stenozа, kojom se prikupljaju informacije neophodne u odluci operatera o optimalnom izboru liječenja i pridonose boljim kliničkim ishodima. Procedure su sigurne, vremenski efektivne, iako i dalje vrlo skupe zbog čega se nedovoljno koriste u svakodnevnoj praksi.

**Introduction:** Stenosis assessment using angiographic images is standard in everyday clinical practice. However, when combined with intravascular evaluation, patient outcomes dramatically improve, which has been confirmed by numerous large multicentre studies and is incorporated in current guidelines on revascularisation. Intravascular ultrasonography (IVUS) is a procedure using specifically designed probes on guidewire tips that can characterize plaque morphology, lesion length, as well as stenosis significance by calculating minimal lumen area of vessels (MLA) and gives valuable data on stent apposition, in-stent restenosis and carina shift during bifurcation stenting. Fractional flow reserve (FFR) and instantaneous wave free ratio (iFR) uses pressure tip guidewires to measure pressure drops on lesions and has certain "cut-off" values for stent deferral.<sup>1,2</sup>

**Results:** We present our data using IVUS and FFR/iFR guided PCI in University Hospital Dubrava from the period of January 2016-January 2018. In total 31 patient underwent IVUS assessment, majority of which the indication was evaluation of coronary artery stenosis (61%). Of them, 68% were studies done on LM/ostial LAD stenosis. Four patients were referred to surgical revascularization, 16 patients underwent PCI and 11 patients were deferred. The mean MLA was 3.29 that guided adequate stent sizing and later apposition confirmation. In follow-up there were no registered deaths, there was only one TLF needing PCI, with no other MACE or angina worsening detected. In the same period 20 patients underwent FFR/iFR evaluation. All patients had stable coronary artery disease and a value of 0.80 for FFR and 0.90 for iFR respectively were used for stent deferral. On average 1.9 vessels were evaluated per patient, the LAD being the leading vessel (48%). In the series 55% of patients underwent PCI with a mean iFR value of 0.82, and the mean deferral value was 0.93. On follow up no MACE or angina worsening were detected.

**Conclusion:** IVUS and FFR/iFR pose a valuable addition in stenosis assessment and characterization, providing information to help guide the operator in optimal decision making and favor better patient outcomes. The procedures are safe and time-efficient, although still costly making its utilization underdiscussed.

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