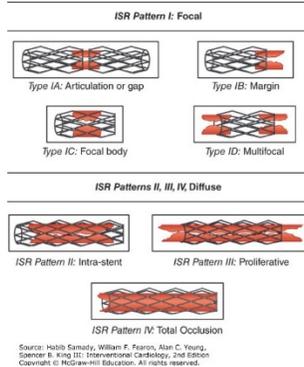


Coronary Angiographic Patterns of Drug Eluting In-Stent Restenosis

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BACKGROUND:

The most widely used clinical procedure for the treatment of coronary atherosclerosis is percutaneous coronary intervention. However, in-stent restenosis in clinical practice has become a real problem. While several major clinical trials showed that drug eluting stents could substantially reduce the ISR rate, the incidence of ISR after DES remained at 5% - 10%.



OBJECTIVE:

To investigate the clinical and angiographic characteristic patterns of ISR and predictors, significantly associated with the occurrence of In-stent restenosis in patients following coronary stenting with drug eluting stents.

METHODS:

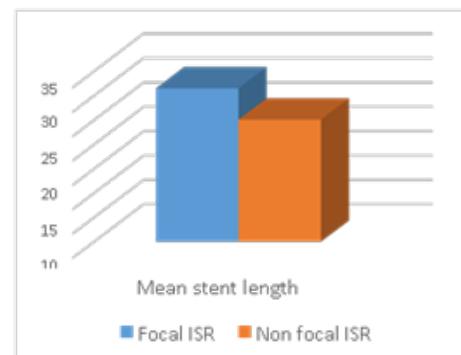
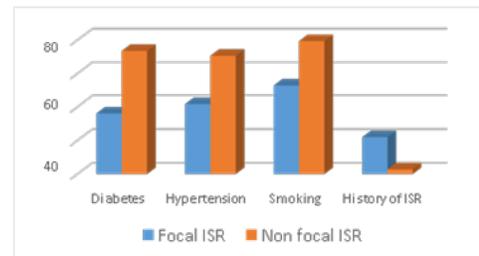
This study included fifty retrospective patients with drug eluting in-stent restenosis detected by coronary angiography between December 2017 and October 2018 from International Cardiac Center and Sharq El Madina Hospital. In addition to the prospective arm of the study that started in October 2018 aiming patients treated by DES who have angina pectoris and/or a positive stress test with angiographic evidence of ISR, that reached twenty patients at June 2020. Patients who present by acute coronary syndrome and those who have known allergy to sirolimus, paclitaxel, heparin, aspirin, or clopidogrel were excluded.

RESULTS:

Compared to patients in focal group, patients in non-focal group were more likely to be hypertensives (nonfocal versus focal group: 70.6% vs 41.7% p=0.015), diabetics (73.5% vs 36.1%, p=0.002), smokers (79.4% vs 52.8, p=0.019), previous history of ISR (62.5% vs 22%, p=0.0001). Focal group has a significantly higher proportion of controlled diabetic patients (76.9% vs 24% p=0.002) guided by HbA1C level.

Non focal group has a significantly lower mean ejection fraction (EF) (49.47 ± 11.58 vs 65.89 ± 9.35 , p=<0.001).

While non focal group has also a significantly longer stents (mean stent length= $3.10 \text{ mm} \pm 0.45 \text{ mm}$ vs $25.07 \text{ mm} \pm 5.59 \text{ mm}$ P<0.001). By multivariate analysis, increased stent length was an independent predictor of non-focal ISR (odd's ratio: 1.232; 95% confidence interval: 1.023 to 1.484, p=0.028).



CONCLUSION:

Diabetes mellitus, hypertension, smoking history, previous history of ISR and increased stent length are associated with non-focal ISR rather than focal

ISR group in the Egyptian patients. Moreover, Non focal patterns of ISR resulted in more reduction in Ejection fraction and higher Wall motion score index than focal ISR. Increased stent length was an independent predictor of non-focal ISR.

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