

Abstract

Introduction : stent underexpansion is a major risk factor for in-stent restenosis and acute in-stent thrombosis . Intravascular ultrasound (IVUS) is the gold standard for detection of stent underexpansion. StentBoost (SB) is a recently developed technique that allows an improved angiographic visualization of the stent.

Aim of work : to compare stent expansion parameters by IVUS , SB enhancement and QCA and to evaluate the efficiency of SB guiding the stent postdilatation.

Methodology: from June 2013 to August 2014 ,33 stents (30 patients) were evaluated after elective PCI using QCA , SB enhancement and IVUS .Optimization of stent deployment of inadequately expanded stents using balloon postdilatation was done then post dilatation reassessment using the previous 3 modalities.

Results :*the maximal SD measured by IVUS & SB was (3.45 ± 0.62 vs 3.55 ± 0.56 , p 0.53) respectively with correlation ($p < 0.0001$ & r 0.74). the minimal SD measured by IVUS & SB was (2.77 ± 0.53 vs 2.58 ± 0.56 , p 0.07) respectively with correlation($p < 0.0001$ & r 0.68). The maximal SD measured by IVUS & QCA (3.45 ± 0.62 vs 2.97 ± 0.59 , p 0.009) respectively with correlation ($p < 0.0001$ & r 0.69). The minimal SD measured by IVUS & QCA (2.77 ± 0.53 vs 1.88 ± 0.60 , p 0.001) respectively with correlation ($p < 0.0001$ & r 0.63). The maximal SD measured by SB & QCA was (3.55 ± 0.56 vs 2.97 ± 0.59 , p 0.001) respectively with correlation ($p < 0.0001$ & r 0.61). The minimal SD measured by SB & QCA was (2.58 ± 0.56 vs 1.88 ± 0.60 , p 0.001) respectively with correlation (p 0.003 & r 0.49). the postdilatation stent diameters obtained by QCA, SB and IVUS were significantly higher than poststenting diameters.*

Conclusion: StentBoost enhancement has superior correlations for stent expansion measured by IVUS when compared with QCA. SB enhancement improved stent visualization and identify stent underexpansion and can guide stent postdilatation .

Key words:Quantitative coronary angiography(QCA),Intravascular ultrasound(IVUS) , Stent Boost (SB)enhancement , stent diameter(SD).