

Analysis and Prediction of Percutaneous Intervention Cost Using a Complexity Score

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Background: There is a large variability of the costs of percutaneous coronary interventions (PCI). Catheterization laboratories have to account these costs to the hospital management.

Methods: We sought to devise a scoring system in order to analyze and possibly predict the costs of PCI's. Using a custom made program, we collected data regarding the technical complexity of PCI's in patients undergoing PCI at our institution between 1/1/2009 and 31/10/2009. The complexity elements were STEMI, Non-STEMI, chronic total occlusion (CTO), bifurcation, Multivessel PCI, Long lesions, PCI in SVG, heavy calcification, Left main, general difficulty and use of intracoronary imaging. Using univariate and multivariate analysis we defined the contribution of these elements and their combinations to the actual cost of the procedures. A scoring system was devised, defining 4 levels of complexity. **Results:** Data was based on the analysis of 1071 PCI's. 29.04% were in complexity group A, with a mean cost of 6115 NIS and comprising 17.1% of the total expenditure, 19.8% were in complexity group B, with a mean cost of 8449 NIS and comprising 16.1% of the total expenditure, 17.8% in group C, with a mean cost of 10672 NIS and comprising 18.3% of the total expenditure and 33.3% in group D, with a mean cost of 15083 NIS, comprising 48.5% of the total expenditure.

Figures: distribution of the complexity groups; mean cost by complexity group

Conclusions: About 70% of the procedures performed at our center involve at least one technical complexity, 33% of them being very complex, with a high cost per procedure. This data should be considered when evaluating the running costs of a cardiac catheterization laboratory.

