

Critical Care Department experience and long term follow-up of patients undergoing Percutaneous Coronary Intervention

Abstract

Objective: We aimed at registering our elective PCI procedures, with respect to their procedure details, outcome, in-hospital complications and long term follow-up. We tried to determine our performance in comparison to other registries and to find out risk factors associated with poor outcomes during the period from January 2003 to December 2007.

Design, setting and participants: Retrospective analysis of data, retrieved through reviewing written paper and electronic database. The material of the study included 1897 patients (1567 male and 333 females) who proceeded to PCI at the Critical Care department, Cairo University (between January 2003 to December 2007), with follow-up 1-5 years.

Main outcome measures: Clinical events including death, myocardial infarction (MI), need for revascularization and major adverse cardiac events (MACE) (a composite of death, MI and need for revascularization), during the in-hospital stay and every 12 months of follow-up till the end of 2008.

Results: The cohort was predominantly male (82.2%), with a mean age of 55 years (SD, 9 years). We had a wide variety of PCI procedures outcome in our registry. BMS stenting shared up to 75.1% of our patients,

while DES shared up to 9.8% and PTCA shared up to 4.1%. Failed PCI contributed to 4.4% of total patients' interventions. There were 1425 patients (75.1%) who received 1813 BMS and 186 patients (9.8%) who received 210 DES

In the overall cohort, rates of clinical events were low during the hospital stay: mortality (0.3%), MI (0.5%) with no reported cases of urgent revascularization. Angiographic complications, irrelevant to post-PCI TIMI flow pattern, occurred in 6.8% of cases in our registry. Clinical success was achieved in 92.8% of cases. Year 2003 had complication rate of 16.8% and it declined till it reached 4.5% in 2006 & 7.4% in 2007.

At 12 months, event rates were: death rate was 3.2% at first year, 5.4% at second year, 7.4% at third year, and 9.9% at fourth year and increased up to 24.2% at 5 years follow-up durations. Myocardial infarction rate was 2.1% at first year, 4.2% at second year, 6.8% at third year, and 8.6% at fourth year and increased up to 17.2% at 5 years follow-up durations. Need for revascularization rate was 8.5% at first year, 10.8% at second year, 12.4% at third year, and 14.7% at fourth year and increased up to 35.9% at 5 years follow-up durations. MACE rate was 10.2% at first year, 15.5% at second year, 19.8% at third year, and 25.2% at fourth year and increased up to 62.5% at 5 years follow-up durations. Through reviewing our patients' database, we could affirm a significant relationship between renal impairment and occurrence of PCI procedure complications. Also Chronic Total occlusion (CTO), long lesions i.e. >20mm, bifurcational lesions, predilatation versus direct stenting, post-dilatation, & number of stents implanted in the same setting were significantly related to poor outcomes in our patients.

Our study concluded that there was no difference between BMS and DES, regarding death, MI events & MACE rates. DES outperformed BMS in need for revascularization which was consistent with results of many results published worldwide.

Conclusion: Our clinical event rates were comparable with other international registries outcomes. Through reviewing and comparing our data, we concluded that our experience is comparable to other registries. We differed in our demographic features which affected our patients' characteristics. This confirmed our need to establish our own registries, based on our real-life scenarios in developing countries where patients' demographics differ significantly, despite close results which might not be true on larger scale studies.

Keywords: PCI registry, PTCA, BMS, DES, MACE, failed PCI