

System Issues in Acute Myocardial Infarction Care (Oral Contributions)
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Does Hospital PTCA Volume Influence Mortality and Complication Rates in the Era of PTCA With Systematic Stenting? Results of the Greater Paris Area PTCA Registry

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Background : In acute myocardial infarction (AMI), primary percutaneous transluminal angioplasty (PTCA) is the preferred option when it can be performed less than 90 minutes after the first medical contact. Because of limited access to high PTCA volume centers in some countries, it has been suggested that PTCA could be performed in low-volume centers on AMI patients. Little data exist on the validity of this strategy in modern era PTCA.

Methods : The Greater Paris area comprises 11 million inhabitants and accounts for 18% of the French population. In 2001, the hospital agency of the Greater Paris area set up a registry of all PTCAs. Data from 2001 and 2002 was analyzed. Hospitals performing < 400 PTCAs per year were classified as low-volume.

Results : A total of 37,848 angioplasty procedures performed in 44 centers located in the Paris area were recorded in the registry during 2001 and 2002; 24% were performed in centers with less than 400 procedures per year. By multivariate analysis, in-hospital mortality predictors were age, female gender, annual PTCA hospital volume and emergency procedures. Interactions warranted a case control analysis (propensity score) comparing centers performing < 400 PTCAs/year and > 400 PTCAs/year. Mortality rates were significantly different in the sub-group of emergency procedures: 6.75% in high vs 8.54% in low-volume centers, $p=0.028$. No difference was noted between low and high-volume centers in the subgroup of non-emergency procedures (0.62% vs 0.62%, $p=0.99$). The same analysis found a statistically significant reduced rate of in-hospital complications in patients admitted to high-volume centers (overall population: 3.01% vs 4.01%, $p = 0.0027$, non-emergency procedures: 8.79% vs 11.01%, $p = 0.0092$, emergency procedures: 1.43% vs 1.95%, $p=0.026$)

Conclusion: These data demonstrate that in the era of modern stenting, a clear inverse relationship exists between hospital PTCA volume and in-hospital mortality after emergency procedures in patients with AMI < 24 hours, cardiogenic shock or OHCA. Tolerance of low-volume thresholds for angioplasty centers with the purpose of providing primary PTCA in AMI should not be recommended, even in underserved areas