

Clinical Investigations

Utilization of Low-Profile Intra-Aortic Balloon Catheters Inserted by the Sheathless Technique in Acute Cardiac Patients: Clinical Efficacy with a Very Low Complication Rate

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Summary

Background: Initial intra-aortic balloon pump (IABP) catheters were of large caliber and their utilization resulted in a high incidence of complications, including limb ischemia, bleeding and thrombosis, peripheral neurologic sequelae, and infection. Despite eventual decrease in the size of IABP catheters, the complication rate has remained high.

Hypothesis: The study was undertaken to determine whether use of recently available low-profile IABP catheters would result in a lower incidence of vascular and bleeding complications.

Methods: We prospectively evaluated the incidence of complications when consecutively using the low-profile (8F) IABP catheter inserted mostly sheathlessly in 161 acute cardiac patients between January 1, 2000 and April, 2003.

Results: Complications encountered included mild transient limb ischemia in two patients (1.2%), minor bleeding episodes in four patients (2.4%), one major puncture site bleeding (0.6%), and a pseudoaneurysm treated percutaneously in two patients (1.2%). Two patients (1.2%) suffered limb ischemia due to embolization or local thrombosis requiring vascular intervention. These complications were milder and their incidence remarkably lower than those reported previously when IABP catheters larger than 8F were used.

Conclusion: Utilization of low-profile IABP 8F catheters in a sheathless technique entails an exceedingly low complication rate despite an acute presentation, intense anticoagulant and antiaggregant therapy, frequent comorbidity, advanced age, severe coronary disease, and reduced cardiac function in a large proportion of treated patients.

Key words: intra-aortic balloon pump, counterpulsation, complications, acute myocardial infarction

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