

Mechanical and infectious complications of central venous catheterizations in a tertiary-level intensive care unit in northern India.

Kaur R, Mathai AS, Abraham J.

Source Department of Anaesthesia, Gian Sagar Medical College and Hospital, Patiala, Punjab, India.

Abstract

BACKGROUND: Central venous catheters (CVC) are associated with mechanical, infectious and thrombotic complications.

AIMS: To study (a) the incidence of mechanical and infectious complications of CVC insertions and to compare, (b) the rates of these complications between the internal jugular venous (IJV) and the subclavian venous (SCV) accesses.

SETTINGS AND DESIGN: An adult intensive care unit of a tertiary care hospital. Prospective, observational study.

METHODS: All landmark-based CVC insertions performed between 1(st) October 2008 and 30(th) September 2009 were prospectively studied for mechanical and infectious complications.

STATISTICAL ANALYSIS: SPSS software for Windows, Version SPSS 16.0, and Epi Info (3.5.1) software.

RESULTS: Four hundred and eighty central venous catheterizations were studied (IJV route, 241 and SCV route, 239). Mechanical complications occurred in 86 patients (17.9%, bleeding complications-48, catheter-related complications-27 and pneumothorax-11). The IJV route was associated with a significantly higher incidence of bleeding complications ($P=0.009$). Forty-seven patients had infectious complications (9.79%), like exit site infections ($n=17$), catheter tip infections ($n=22$) and catheter-related bloodstream infections (CRBSIs) ($n=8$). The risks of infectious complications increased significantly if the CVC was in situ for longer than 7 days ($P=0.009$), especially with IJV cannulae. The incidence density of CVC tip infections was 7.67 per 1000 catheter days and of CRBSIs was 2.79 per 1000 catheter days.

CONCLUSIONS: Bleeding complications occurred more frequently with IJV insertions and infectious complications occurred more commonly in cannulae that were left in situ for longer than 7 days.