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The Attributable Cost of Central Line Associated Blood Stream Infection (BSI) In Intensive Care Units In Milan, Italy. A Prospective, Matched Analysis.

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Objectives:

The aim of the study was to estimate the cost of CVC-associated BSI (laboratory confirmed BSI and clinical sepsis)

Methods:

A 2 -year prospective nested case-control study was undertaken in four Intensive care units (ICU) in a teaching hospital. Patients with BSI (cases) and patients without BSI (controls) were matched for ICU, length of stay (LOS), gender, age, and average severity of illness score. Patient's LOS in the ICU was obtained prospectively on daily rounds. Cost evaluation was estimated based upon the consumption of resources (i.e. disposables, tests, drugs, specialists' consultations, length of stay, medical procedures) while in hospital. Unit costs were provided by the hospital finance department.

Results:

10 cases and 25 controls have been enrolled in the study. The mean age of cases and controls were 68.4 and 66.3 years (P: 0.735); 80% and 44% were males respectively (P: 0.053); ICU type and severity illness score did not differ statistically (P: 0.442 and P: 0.286 respectively). All of the matched patients were in the ICU at least 5 days.

The mean LOS of patients with and without BSI was 18.9 and 10.4 days (P: 0.007). On average, the extra cost for drugs was € 231.6 (P: 0.036); for supplies € 528.3 (P: 0.095); for lab tests € 1111.9 (P: 0.007); and for specialist visits € 19.2 (P: 0.301). The mean extra hospital overheads cost was € 9058.5 (P: 0.015). Overall, the mean cost of patients with and without BSI was € 23159.1 and € 12750.1 (P: 0.01). The extra cost per case was € 10409.

Conclusions:

Patients with BSI had longer hospitalization, and greater cost. The present study supports the need for utilization of interventions to reduce CVC-associated BSIs so as to reduce costs.