ABSTRACTS - Special Topics 523A

Does Robotic Technology Make Minimally Invasive Cardiac Surgery Too Expensive? A Hospital Cost Analysis of Robotic and Conventional Techniques


Background: While potential benefits of robotically assisted cardiac surgery include decreased morbidity and improved recovery, some have suggested a prohibitively high cost. This study was undertaken to compare the hospital costs of open and robotically assisted cardiac procedures.

Methods: Clinical and financial data were obtained from our hospital database for patients undergoing atrial septal defect (ASD) or mitral valve repair (MVr) procedures. Procedures were performed by sternotomy or minithoracotomy (OPEN, n=68), or with robotic assistance (ROBO, n=30) using the Da Vinci system (Intuitive Surgical, Mountain View, CA). Total cost was comprised of direct (patient-specific) and indirect (facility-specific) costs and was further subdivided into operative and postoperative costs.

Results: Intraoperative cost was higher for robotic ASD (0.064) and robotic MVr (0.665) compared to conventional procedures (Table 1). Postoperative cost was slightly higher for ROBO, which included less ICU days post-MVr. Costs of ROBO procedures were offset by a less costly postoperative course.

Conclusions: Beyond the initial capital investment associated with robotic technology, robotic surgery does not increase total hospital cost. While inpatient costs are higher for robotic procedures, these are offset by a less costly postoperative course. This may be secondary to a trend toward decreased ICU and hospital stay for robotic patients.

A Physician Assistant Hospital Service Provides More Efficient Care to Interventional Cardiology Patients than a Medical Housestaff Service

Andrew C. Eisenhauer, Michael E. Cohnen, Brigham and Women's Hospital, Boston, MA

Background: Teaching hospitals have traditionally relied on medical housestaff supervised by attending physicians. Increasingly, physician assistants (PA) have taken on larger roles within the hospital but the efficiency of this approach has not been rigorously evaluated.

Methods: All 5208 patients (pts) having cardiac catheterization procedures in a teaching hospital from 7/1/2000 through 8/30/2001 were reviewed. After excluding ambulatory pts (1471) and those admitted to critical care units, there were 1147 admissions to the PA staffed service (PAS) and 1317 to the medical housestaff service (HSS). Because of lack of uniform admitting criteria, the pt cohorts in each service were not equivalent.

Results: When corrected for diagnosis and comorbidity, length of stay and charges (clinical laboratory) generated by clinical management (not procedures) were significantly lower on the PAS compared to HSS, while mortality was identical (0% PAS vs 1.56% HSS, p<0.05). Costs for these procedures were illustrated (Table 2). The PAS clinical results are equivalent to those of the HSS but the PAS is more effective in limiting inpatient length of stay and clinical management-related charges. This service model maximizes excellent clinical care while controlling resource consumption.

1070-52 Institutional Variations in Surgical Treatment Costs in the United States and Canada

Mark J. Eisenberg, Kristian B. Filton, Seema Haider, Louise Pilote, Jewish General Hospital/McGill University, Montreal, PQ, Canada

Background: Numerous studies have examined the cost of specific procedures at individual hospitals however, little is known about institutional variations in surgical treatment costs.

Methods: We compared the costs of treating 1,057 consecutive patients undergoing abdominal aortic aneurysm (AAA) repair and 11,459 patients undergoing coronary artery bypass graft (CABG) surgery between 1997 and 2001 at 6 U.S. (U1-U6) and 4 Canadian (C1-C4) nonproprietary hospitals. Using a cost accounting system to provide patient-level clinical and cost data, Canadian costs were converted to U.S. dollars using purchasing power parities.

Results: Patients had similar demographic and clinical characteristics throughout and across countries. In the U.S., there were significant differences in treatment costs at different hospitals for both AAA repair and CABG. In Canada, inter-hospital variations were less prominent but were still significantly different. Mortality rates among AAA repair patients ranged from 4.8-13.3% while those in Canada were 5.1-20.7%. Among those undergoing CABG, mortality rates ranged from 0.3-3.3% and 0.8-4.2%, respectively. In both countries, variations in treatment costs were not related to variations in mortality.

POSTER SESSION

1070 Economics in Outcomes Research

Sunday, March 30, 2003, 3:00 p.m.-5:00 p.m.
McCormick Place, Hall A
Presentation Hours: 3:00 p.m.-4:00 p.m.

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