

11-1-2004

Comparative Cost Analysis of CRRT in ICU/ CCU Patients Undergoing Cardiovascular Surgery vs. Other Procedures at a Texas Hospital

Tejaswi Belavadi

Alberto Coustasse

Marshall University, coustassehen@marshall.edu

Douglas Mains

Antonio A. Rene

Follow this and additional works at: http://mds.marshall.edu/mgmt_faculty

 Part of the [Business Administration, Management, and Operations Commons](#), [Health and Medical Administration Commons](#), and the [Health Services Administration Commons](#)

Recommended Citation

Belavadi T., Coustasse, A., Mains, D., Rene, A. Comparative cost analysis of CRRT in ICU/CCU patients undergoing cardiovascular surgery vs. other procedures at a Texas hospital. American Public Health Association Annual Meeting, Washington, D.C. Nov. 2004.

This Conference Proceeding is brought to you for free and open access by the Management, Marketing and MIS at Marshall Digital Scholar. It has been accepted for inclusion in Management Faculty Research by an authorized administrator of Marshall Digital Scholar. For more information, please contact zhangj@marshall.edu.



Comparative Cost Analysis of CRRT in ICU/CCU Patients Undergoing Cardiovascular Surgery Vs. Other Procedures at a Texas Hospital

University of North Texas Health Science Center School of Public Health

Tejaswi Belavadi, MBBS, MPH., Alberto Coustasse, MD, MBA, Dr.PH.,
Douglas Mains, Dr.PH., Antonio A. Rene., PhD, MPH.



ABSTRACT

The purpose of this study was to conduct a comparative analysis of hospital costs incurred by patients undergoing Cardiovascular Surgery (CVS) and patients undergoing other medical procedures who received Continuous Renal Replacement Therapy (CRRT) in a teaching hospital. A total of 117 patients were identified through review of medical charts for the period of January 1999 to August 2002. Twenty one percent of them were identified having CVS. Eighty-eight percent of the CVS patients admitted to the ICU for CRRT died compared to 67% for non-CVS patients ($p=0.047$). Average actual costs of hospitalization were \$47,225 for CVS patients and \$51,724 for non-CVS patients. The mean length of stay (LOS) was 12.8 days for the CVS patients and 18.1 days for other patients ($p=0.03$). Mean LOS for patients who survived was 23.1 days whereas the average LOS for patients who died was 14.5 days ($p=0.06$). The differences found between patients who had CVS with CRRT as compared to non-CVS patients with CRRT in terms of mortality and length of stay raise ethical as well cost effectiveness questions of the procedure.

RESULTS

Characteristics of patients undergoing CRRT at the ICU

Characteristic	Number	Percent
Age group		
< 65	47	40.2
>65	70	59.8
Gender		
Female	66	56.4
Male	51	43.6
Race		
White non Hispanics	69	59
Black non Hispanics	31	26.5
Hispanics	16	13.7
Other	1	0.8
Total	117	100

Costs and payments using CRRT during hospitalization

	Procedure		Total CRRT patients
	CV Surgery w or w/o other surgery	Non-CV Surgery cases	
Hospital Costs			
Mean	\$47,225	\$51,724	\$55,763
Payments Received			
Mean	\$28,795	\$33,786	\$32,720
Total Profit (loss)	\$(460,762)	\$(1,650,276)	\$(2,111,038)

GOALS

- To conduct a comparative analysis of estimated hospital costs of a population of patients who have undergone CRRT.
- To perform comparative analysis between patients with cardiovascular surgery (CVS), patients with other surgeries and patients with no surgery at the ICU.

INTRODUCTION

- Renal failure is recognized as a common complication of patients admitted to the Intensive Care Unit (ICU).
- This study describes the clinical characteristics and examines hospital costs involved in the care of 117 patients undergoing Continuous Renal Replacement Therapy (CRRT).
- End of Life decisions regarding the withdrawal, withholding of life supporting and futile care have become commonplace within the ICUs.

Patients with CRRT at the ICU. Type of Procedure.

Type of procedure	n	%
CVS	19	16.2
CVS with another surgery	6	5.1
Medical Cases with another Surgery	48	41.0
Medical cases no surgery	44	37.6
Total	117	100%

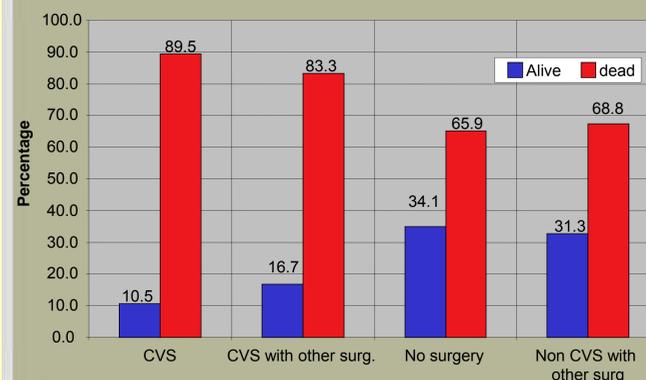
CONCLUSION

- Based on the results of this analysis, we conclude that among patients undergoing CRRT, increased costs are incurred for patients <65 years old that undergo surgery and who do not expire in the hospital.
- Being a female <65 years old is associated with leaving the hospital alive.
- There is greater risk for male patients 65 years or older to expire.
- Patients undergoing CVS also have a greater risk of expiring in the hospital.
- These characteristics lend themselves more difficult cost benefit questions that involve ethical and economic decisions.

METHODS

- Retrospective review of clinical and cost data from patient discharged between 01/01/99 to 08/31/02 (3 fiscal years).
- Main inclusion criteria: Patients undergoing CRRT at the ICU for any diagnosis or disease.
- Variables: Gender, age group, race/ethnicity, CVS surgery, other surgeries, non surgical, length of stay, estimated costs, actual payments, profit (loss) and hospital discharge status.
- Freidman's cost to charge ratio of 33% was used to estimate cost.

CRRT at the ICU: Discharge status



DISCUSSION

- Efforts to prolonging life once considered an outcome of healing may be viewed by some as harmful acts of prolonging suffering.
- The costs of futile care for the dying are enormous. Futility can present challenges because of the monetary cost of such care, its negative effect on staff members and the burden it creates on the patient family and the clinicians.