



Full Length Research Paper

Pattern of medical illnesses, complications and mortality and morbidity in bedridden hospitalized patients in a secondary care hospital in Makkah region

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Accepted 06 October, 2011

This study is to find problems in pattern of care, pattern of medical illnesses on admission to hospital, complications while hospitalized including mortality in bedridden patients in Makkah region of Saudi Arabia in a secondary care hospital in order to find alternative modes of care like home care. This is a retrospective study conducted during the calendar years 2007-2008 and included 217 bedridden patients. The patients admitted in medical wards of the hospital were enlisted. Those with terminal illnesses like malignancy were excluded. Their degree of disability was assessed using the Katz index of the activities of daily living. Total of 184 patients fulfilled the study criteria of bedridden cases. A proforma was developed, including variables such as age, sex, diagnosis at admission, area of residency, presenting complaints and condition on admission, attending persons accompanying to hospital, type and presence of caregiver at home, duration of hospital stay, reasons of refusal for discharge from hospital and complications and cause of death. The following data regarding nursing care of these patients was collected, nurse's assessment of patients, fulfillment of doctor's instructions like measurement and recording of vital signs, feeding, bed making, diaper change, posture change, physiotherapy and administration of medication. Descriptive statistical methods were applied, as well as data tabulation. Only 90(48%) cases received medication in time and check up of vital signs as advised by doctor. Wounds were mostly neglected. Wound care as advised by doctor was found in 21% cases only. Sepsis and aspiration pneumonia were the most common complications noted. On the average each patient had undergone 44 culture tests for blood, urine, wounds, sputum etc. Mean duration of hospital stay was 21+/- 37 days with range of 3 to 210 days. Sepsis was the most common cause of death (66.66%) and interestingly 84(45.65%) deaths took place in hospital. Bedridden hospitalized patients had high rates of medical complications especially pressure sores, aspiration pneumonia and sepsis. 45% of the total patients died during prolonged hospitalization with sepsis as the most important cause of death. Mean duration of hospitalization was 21 days with range from 3 to 210 days. Minor problems like dehydration, urinary tract infections, pressure sores, feeding problems, care of bladder and bowl were the main reasons for hospitalization. There were pitfalls in carrying out doctor orders by nursing staff especially recording of vitals, change of posture, feeding and cleaning. Most of these patients come from urban area. High rate of hospital acquired infections and death due to sepsis indicates need for emphasis on alternative care like home care for this type of patient population. This will also prevent the spread of drug resistant organisms inside the hospitals and save lot of resources. The summary focused on the assess pattern of medical conditions on admission to hospital in bedridden patients and pitfalls in nursing care, to find the complications and mortality with prolonged hospitalisation in bedridden hospitalised patients to highlight the home care as an alternative to hospitalised care for bedridden patients.

Keywords: Medical illnesses, mortality, morbidity, Makkah region.

INTRODUCTION

The demographic transition has resulted in increasing life expectancy and an increasing proportion of the elderly people all over the world. A parallel epidemiologic transition has led to a predominance of chronic diseases (Harwood et al., 2004). Global life expectancy at birth was 65 years in the year 2000 (WHO, 1998-2000), while the health-adjusted life expectancy was 56 years. This means that on an average, every citizen of the earth will live about 9 years of their total life span with some disease or disability. Also, this means that an increasing proportion of people will suffer from chronic diseases. Many of such people need long term personal assistance in their activities of daily living of life due to severely disabling and chronic nature of their diseases.

Most of these patients are cared for at home, with family members and friends providing the bulk of the care (WHO, 2002). This situation has led to reorientation of health care systems in the developed countries from hospitals and nursing institutions to the domiciliary care arrangements that the chronically disabled prefer and use. Care in domiciliary settings has been found to be more cost effective, and the patients too, find domiciliary settings to be more comfortable (Stessman et al., 1997; Strauss, 1984; WHO, 2002; Adamchak et al., 1991; Shammari, 1997). Shifting of long-term care provision in rich societies from institutionalized care to the home has brought into focus the quality of care available to the patients at home. While data about the quality of care being provided in hospitals, nursing homes, residential institutions is available directly or indirectly, data about the quality of long term care (LTC) provided to the severely disabled at their own homes is difficult to gather because of the multiple socio-demographic and interpersonal factors involved (Improving the Quality of Long Term Care Committee, 2001).

However, in Saudi Arabia the situation is different. Hi-tech care for the bedridden is practically non-existent. Hospital based care for the bedridden is the only available care on a long-term basis. Data on quality of home-based LTC is scarce. Against this background the present study was conducted to measure in terms of

quality and pattern, the hospital based provision of care for the chronically bedridden patients and to introduce home care in our setting.

METHODS

This is a retrospective study conducted during the calendar years 2007-2009 and included 217 patients labeled as bedridden. The patients admitted in medical wards of the hospital were enlisted. Their degree of disability was assessed using the Katz index of the activities of daily living. Those with terminal illnesses like malignancy were excluded. Total of 184 patients fulfilled the study criteria. A proforma was developed, including variables such as age, sex, diagnosis at admission, area of residency, presenting complaints and condition on admission, attending persons accompanying to hospital, type and presence of caregiver at home, duration of hospital stay, and reasons of refusal for discharge from hospital and complications and cause of death. The data regarding nursing care of these patients was collected: nurse's assessment of patients, fulfillment of doctor's instructions like measurement and recording of vital signs, feeding, bed making, diaper change, posture change, physiotherapy and administration of medication. Descriptive statistical methods were applied, as well as data tabulation. Approval for the study was obtained from the ethical committee of the hospital.

Operational definitions

Bedridden Case: This included all cases above 12 years of age who had been confined to bed for 15 days or more, for 90% of the time during the day and who were unable to get out of bed without assistance¹³.

Key caregiver: The person in the family who was primarily responsible for the care of the index case.

Exclusion criteria

All ambulatory cases were excluded i.e. those who could

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Table 1. Prehospital complications (n=184)

Variable	Number	Percent %
pressure sores	66	35.86
Contractures	40	21.73
Sepsis	52	28.26
Dehydration	44	23.91
Aspiration	22	11.95
Hyperglycemic hyperosmolar syndrome	1	0.54
Deep vein thrombosis	4	2.17
hypoglycemia	6	3.26
malnutrition	56	30.43
New stroke	22	11.95
New cardiac event	6	3.26

Table 2. Profile of bedridden cases n=184

variable	number	
Age(mean)	69 +/- 17 years	(Range 14-104 years)
sex	184	100%
male	99	53.8%
female	85	46.2%
widowers	44	23.91%
widows	56	30.43%
Joint family	180	
single	4	3.18%
Family size >3	180	97.82%
disability		
musculoskeletal	24	13.04%
neurological	120	65.21%
Age related	40	21.75%
Duration since		

get off the bed without assistance or those who could walk without assistance and those who had terminal illnesses like malignancy.

RESULTS

Minor problems like dehydration, urinary tract infections,

pressure sores, feeding problems, care of bladder and bowel were the main reasons for hospitalization (Table 1). Mean age of subjects was 69+/-17 years. Males were 95 and females 89. Only 7(3.80%) patients were non-Saudis 3 of them Hajj pilgrims. 180 patients lived in joint families. All subjects had total dependence in the domains of bathing, dressing, toileting and transfer (Table 2). Most common cause of disability was neurological diseases.

Table 3. Care received by the bedridden cases (n=184)

variable	number	Percent %
Key care givers at home		
- Blood relation	80(20/60)	43.47
M/F		35.86
- spouse	66	20.67
- Hired worker		
	38	
Type of care while hospitalised		
Seen by consultant times/week	122	66.30
Seen by junior doctor times /week	184	100.00
Doctor orders followed in time	90	48.91
Cleaning as required	70	38.04
Feeding in time		
-per mouth	40	21.73
-nasogastric	70	38.04
-gastrostomy tube	76	41.33
Rathins/week	50	27.17

Table 4. Complications in hospital (n=184)

	number	Percent %
complication		
Pressure sores	64	34.78
sepsis	122	66.30
Aspiration pneumonia	68	36.95
malnutrition	12	6.52
death	84	45.65

Predominantly, female family members were caring for the patients. Hired helpers were also used by 21 % of the cases. 140(76%) were dependent on toileting, 130(70%) were dependent on feeding and all 184(100 %) were dependent on support for transfer from one place to another. Neurological disorders like stroke were the most common 120(65.21%) cause of disability followed by old age (21.78%). 112(60.86%) patients were bedridden for more than one year. Only 90(48%) cases received

medication in time and check up of vital signs as advised by doctor. Wounds were mostly neglected. Dressings and other wound care as advised by doctor was carried out in 21% cases only (table 3). Sepsis and aspiration pneumonia were the most common complications noted i.e., 120(66.30%) with aspiration pneumonia as the cause of sepsis in 68 (56.6%) cases. (Table 4). On the average each patient had undergone 44 culture tests for blood, urine, wounds, sputum etc. Multidrug resistant Acinto-

Table 5. Showing most common cause of death n=84

Cause of death	number	Percent %
sepsis	56	66.66
Aspiration pneumonia	18	21.44
other	10	11.90

bacter species and multidrug resistant staphylococcus (MRSA) were the commonest organisms isolated from sputum and wound followed by pseudomonas and E.coli from urine, wound and sputum. Mean duration of hospital stay was 21+/- 37 days with range of 3 to 210 days. Sepsis was the most common cause of death (66.66%) and interestingly 84(45.65%) deaths took place in hospital (table 5).

DISCUSSION

There is global trend towards increase in elderly population. The projected trends for 2010 are that 13.0% of the population over the age of 65 years and by 2050 AD 20% of the population will be over 65 (Robinson and Reinhard, 2009) (Figure 1).

Since with increase in aging population, the number of people with chronic ailments is likely to increase. Future years will see a more diverse population with increased aggressive treatment of chronic illness. Consumers of health care and their family caregivers will take more active steps to manage and coordinate their own care (Projections of the Population by Age and Sex for the United States 2010-2050). In developed world most of the people in elderly age group prefer home care (Shepperd et al., 2009), but in our setup most the caregivers prefer hospital care due to unawareness about the care of bowel and bladder, difficulty in feeding, social and cultural factors involved in living in nuclear families.

Most of our patients were bedridden for more than one year. Males outnumbered females and mean age of the patients was 69 years+/-17 years with a range of 14-104 years. Neurological disorders like stroke were the most common 120(65.21%) cause of disability followed by old age related musculoskeletal disorders (21.78%). Diabetes mellitus and hypertension were the commonest underlying comorbid conditions.

In spite that more than 98% of our patients were part of

a nuclear family with family size greater than 3, all the patients were brought to hospital for minor complaints and care-givers requested for hospitalization. Contractures, bedsores and malnutrition were the most common features on presentation reflecting negligence and lack of care at home especially physiotherapy. Difficulty in feeding was one of the other reasons of hospitalization. Feeding was mostly through nasogastric tube (65.21%) as compared to gastrostomy in (13.04%) and this was statically significant(p=.000). The higher percentage of cases on nasogastric feeding reflects the family refusal of the procedure of gastrostomy and cultural and social setup for acceptance of such ways of feeding. There have been reports of less frequent hospitalizations and complications of aspiration pneumonia in patients on percutaneous gastrostomy feeding (Muhammad et al., 2006). Thus encouraging the caregivers to accept alternative routes of feeding would decrease number of hospitalizations in elderly bedridden. Family size and joint family living had a remarkable impact as regards home care for those bedridden without neurological cause of disability especially intact speech. We had no difficulty in persuading discharge of such patients. This is due to the nuclear type of family living with great respect to the elderly and the feeling of belonging in the latter. However this was not true for other cases whose home care was negligible and attendants and caregivers roaming from hospital to hospital for hospitalization. Thus prolonged hospital stay was associated with more cases of nosocomial infections especially with drug resistant organisms. Sepsis was the most common complication in our patients and mostly followed aspiration pneumonia. Emergence of drug resistant organisms in elderly bedridden patients has been well reported in literature (Defez et al., 2004) with nasogastric feeding being one of the contributing factors. In addition to urinary catheterization, Long stay in hospital not only leads to spread of multidrug resistant organisms in the hospital but their persistence as well as perpetua-

tion. One of the pitfalls of care for such patients is frequent cultures and use of antibiotics as per culture results thus treating colonizers as well as infectors. This practice need to be discouraged if we want to cut-down wastage of resources for repeated cultures, antibiotic use and perpetuation of spread of multidrug resistant organisms in the hospitals. Mean of 44 cultures for various body fluids and wounds in our study was the most worrisome observation of our study. Labelling and treating the patients as sepsis even in the absence of signs of infection needs to be discouraged by administrative antibiotic control policy and infection control department perusal of such cases. This highlights the role of clinical pharmacist in hospitals. Aspiration pneumonia was another common complication in our patients and usual isolates were Anitobacter species and Multi-drug resistant staphylocococcus aureus as in other studies (Marrie, 2002). Patients with bedsores were more likely to die in hospital due to the grade and depth of bedsores at presentation and of course less frequent posture changes and cleaning of wounds while hospitalized. Aspiration pneumonia was another common cause of morbidity and death in our patients. This is again attributed to prolonged nasogastric feeding and improper technique of feeding like bringing back the patient to supine posture immediately. Proper technique of feeding of such patients is of paramount importance to nursing care. Less frequent visits to patients and flaws in persuing doctor orders can be attributed to staffing, work load, and decrease in motivation to care for most of the bedridden patients of long stay in hospitals infected with multidrug resistant organisms.

The drawback of the study was that no follow-up was pursued for discharged cases and there was no comparison group for mortality and complications to hospitalized patients. This issue needs further research especially when the home care has been started in the region.

Finding; this study had no source of finding and was carried out voluntarily by the researchers.

ACKNOWLEDGEMENTS

The authors have received a special research grant for research and publication of this manuscript from MICRO LABS LTD. 27-RACE COURSE ROAD BANGLORE, 560001, INDIA. The authors acknowledged their contribution for the human cause. We acknowledge the contribution of Dr. Zeyad S Al Harbi, Dr Asim AL Shanbari, Dr Waleed M hussain, Dr Wail Al Miami, Dr Jamal T Hemdi, Dr. Mohanand Hemdi, Dr. Mohd I Binhussain, MBBS, Umm AlQurrah University, Makkah, Saudi Arabia. Dr .Mubeena Akhtar, MBBS, Hera General Hospital, Makkah, Saudi Arabia Corresponding Author;

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How to cite this article: Wani AM and Malik NH (2013). Pattern of medical illnesses, complications and mortality and morbidity in bedridden hospitalized patients in a secondary care hospital in Makkah region. *J. Med. Med. Sci.* 4(11):410-416

Appendix

WHAT IS KNOWN ABOUT BEDRIDDEN PATIENTS IN OUR SETUP

- 1.The number of elderly bedridden is increasing each year.
2. Most of the bedridden need for care of bed, bath, feeding, bladder and bowel care but no data are there to assess the problems of bedridden hospitalized patients to think of alternative modes of care like home care.

WHAT THIS STUDY BROUGHT TO SURFACE

- 1.Hospital based care is the most **COMMON** type of care for elderly bedridden patients in our setup.
- 2.Home care of the elderly bedridden patients is negligible and need to be encouraged.
3. Hospital care and prolonged hospitalization is associated with emergence of multidrug resistant organisms, misuse of hospital resources .
4. Stroke related disability was the most common cause of bedridden status in our patients followed by age related dementia.
5. Sepsis following aspiration pneumonia have been the most common causes of death in our patients.
6. Family education needs re-emphasis to achieve the desired goal. ..