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Infection in long term care facility in the kingdom of Bahrain

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Summary Infections in long term care facilities (LTCF) are common and are considered a major cause of mortality and morbidity. Endemic infections and outbreaks are observed in LTCF. Of particular concern is the growth of multi-drug resistant organisms. A study was conducted in the Kingdom of Bahrain concerning infections among the residents in a LTCF. The aim was to define the rate, type and outcomes of institutional infections. The different treatment modalities and antimicrobials used were evaluated. Our facility cares for the elderly and a heterogeneous group of patients from different populations (e.g., mentally retarded, bedbound due to various disabilities and other forms of consciousness impairment such as post stroke disability, cerebral palsy and anoxic brain damage). The initial span of six months was changed to seven months to increase the sample size and improve the data analysis. This was a prospective study conducted in Muharaq Geriatric Hospital in the Kingdom of Bahrain. The study was conducted over seven months from January 2013 to July 2013 on 104 patients. During that period, patients with new positive cultures from different sites were included. The clinical features, microbiological features and outcomes of the bacteremic episodes were included. The information was collected by a questionnaire created by the research team. From a total of 104

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patients staying in the LTFC, 19 had positive cultures from different sites at different times. The study showed that infections are common, especially urinary tract infections.

Introduction

Long term care facilities (LTCF) provide a spectrum of institutional health care programs and services outside the acute care hospital. A growing number of geriatric patients are receiving care in LTCF. Infections in these facilities are very common and represent a major cause of morbidity and mortality among the elderly. Residents are gathered in a confined space with activities taking place in groups. Some of the residents have impaired cognitive abilities and poor self-hygiene. Caregivers are poorly trained in infection control practices. Understaffing problems in these nursing homes are common. The elderly are predisposed to infection particularly because they are physiologically old and they suffer a list of co-morbidities. It is sometimes difficult to diagnose infections in the elderly, which delays the detection and treatment of infections.

Endemic infections and outbreaks are observed in LTCF. Of particular concern is the growth of multi-drug resistant organisms, such as extended *spectrum beta-lactamases*, *methicillin-resistant Staphylococcus aureus* (*MRSA*) and *vancomycin-resistant enterococci* (*VRE*). The most common infections are respiratory tract infections, urinary tract infections, gastrointestinal infections and skin infections. It is estimated that approximately 60% of lower respiratory infections are pneumonias, which are often fatal. Urinary tract infections are the most common infection in long-term care facilities for the elderly. The prevalence rates of bacteriuria are 25—50%, though most patients remain asymptomatic. Skin and soft tissue infections include decubitus ulcers, infected vascular or diabetic foot ulcers and other types of cellulitis. Gastrointestinal infections primarily manifest as diarrhea [1].

In Frankfurt am Main, Germany, 288 patients from two geriatric clinics ($n = 46$), eight nursing homes ($n = 178$) and two ambulant care facilities ($n = 64$), and 64 staff members were screened for MDRB between October 2006 and May 2007. Fifty-eight patients (20.1%) and four staff members (6.2%) were colonized with MDRB. Among the patients, 27 (9.4%) were colonized with MRSA, 11 (3.8%) screened positive for VRE, and 25 (8.7%) were colonized with ESBL producing Enterobacteriaceae. The prevalence rates of MDRB in geriatric clinics, nursing homes, and ambulatory care facilities were 32.6%, 18.5% and 15.6%, respectively. Significant risk factors for MDRB were immobility (OR: 2.7, 95% CI: 1.5—4.9; $p = 0.002$), urinary catheters (OR: 3.1, 95% CI: 1.7—5.9; $p < 0.001$), former hospitalization (OR: 2.1, 95% CI: 1.1—4.0; $p = 0.033$) and wounds/decubiti (OR: 2.3, 95% CI: 1.5—4.9; $p = 0.03$). The high level of MDRB in geriatric clinics, nursing homes, and ambulatory care facilities indicate the importance of these institutions as a reservoir for dissemination [2].

A study was conducted in the Kingdom of Bahrain regarding infections among residents a LTCF. The aim was to define the prevalence, type and outcomes of institutional infections. The different treatment modalities and antimicrobials and antimicrobial resistance were evaluated to assess the status of infection control programs in the facilities. Our facility cares for the elderly and a heterogeneous group of patients from different populations (e.g., mentally retarded, bed bound patients and patients with other forms of consciousness impairment).

Materials and methods

A prospective study was conducted in Muharaq Geriatric Hospital in the Kingdom of Bahrain. The study was performed over seven months from January 2013 to July 2013 in 104 patients (the full capacity of the hospital). The initial span of six months was changed to seven months to increase the sample size and improve the data analysis.

A data form was compiled. Important risk factors, comorbidities, medications and other important parameters were agreed upon. The form was reviewed and finalized before the start of the study.

All of the patients who developed symptoms suggestive of infections (i.e., fever, poor feeding, dysuria, diarrhea, altered mental status) had a full septic work up performed. The patients who