



# Femoral neck fractures in Lithuania: The one year audit results

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## KEYWORDS

Hip fracture;  
Femoral neck fracture  
audit;  
Functional results

**Summary Aim:** The purpose of this study was to perform an audit of patients with hip fractures treated in the Kaunas Medical University Hospital, Lithuania over a one year period, and to analyze outcomes after 4 months.

**Methods:** Hip fracture patients, who were treated in Kaunas Medical University Hospital, were included in the audit. All data were recorded according to the Swedish Hip Fracture Register forms. Four months after the fracture, these forms and a standardized questionnaire, the Hip Disability and Osteoarthritis Outcome Score, were used to evaluate functional results for patients included in the study.

**Results:** A total of 64 patients with a mean age of 75 years were consecutively included. At the 4 month follow up, the patients were using more walking aids ( $p = 0.016$ ) and had poorer mobility ( $p = 0.0018$ ) compared to their prefracture status. Patients who were living alone ( $p = 0.03$ ) and had a greater ASA grade ( $p = 0.01$ ), were more likely to express hip joint symptoms. Older age was associated with greater pain ( $p = 0.04$ ) and worse mobility ( $p = 0.02$ ).

**Conclusion:** Through the introduction of prospective audit of patients with femoral neck fracture in Lithuania, we identified that high ASA grade and old age are significantly affecting outcomes for these patients.

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## Editor's Comment:

Hip Fracture Audit may be now relatively common in a number of countries across the world. This paper demonstrates how orthopaedic practitioners in a small country relatively new to the European Union sought the support of another with greater experience of audit in not only undertaking audit but in developing and improving practice for this vulnerable group of patients in the trauma setting. What is highlighted here is just how much value such support can be. Also illustrated may be some of the different ways hip fractures may be managed. Making comparisons can often be useful, but must also be taken in context with local culture and the nature of the health care system.

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## Introduction

### Background

Hip fractures constitute a serious and common health problem among older adults from both the individual and public health perspectives. The fracture is a serious consequence of osteoporosis. Men who fracture a hip, tend to be younger than women and they suffer from more comorbid conditions (Poor et al., 1995). There are two main types of hip fracture; the fracture is either located in the femoral neck (cervical or femoral neck fracture) or through or around the proximal femur in the region of the trochanters. Patients with a trochanteric fractures tend to be older (Fox et al., 2000) and thinner (Bachrach-Lindström and Unosson, 2000) and they are less mobile before and after the fracture (Bachrach-Lindström and Unosson, 2000).

Hip fracture in the elderly is associated with increased morbidity and mortality compared to the general population (Zuckerman, 1996; Van Balen et al., 2001; Leonardsson et al., 2010). Treatment of the fracture varies in different countries and is usually based on the research results from the particular country. Performing research projects to estimate optimal treatment for hip fracture, adapted to individual countries, is important because of the great variety in patients' demographic and general health factors which may affect the results.

Lithuania has a population of 3.35 million and in 2009 there were 2783 hip fracture patients admitted to health care institutions there ([www.lsic.lt](http://www.lsic.lt)). The treatment methods for hip fractures, postoperative care and rehabilitation differ between hospitals in Lithuania. The choice of treatment is mostly based on personal experience and traditions in the institutions. Furthermore, before 2008 neither detailed audit of patients with hip fracture nor further analysis of data was conducted in Lithuania. Only data which includes the patient's personal information, diagnosis and type of treatment method is collected by the State Patients Fund. This provides insufficient information to perform systematic analysis of the outcomes of hip fracture treatment.

Prospective systematic audit and a national register has been suggested as one of the best approaches to measuring and improving outcomes (Thorngren, 1993). In 1988 the first National Swedish Hip Fracture Register was initiated at Lund University Hospital (Thorngren, 1993). Later this project spread into the other European countries (Gjertsen et al., 2008a; Heikkinen et al., 2005). The value of the reg-

ister was recognized as providing more accurate information about complications, risk factors and mortality which can help to improve hip fracture treatment and care (Hommel, 2007).

The lack of knowledge about hip fracture patients' outcomes and a dearth of existing research projects on the subject in Lithuania encouraged the authors to commence prospective audit of patients with hip fractures based on the Swedish approach. The decision was made to investigate only patients with a fracture of the neck of the femur (FNF) and to exclude trochanteric fractures because of very low numbers (around 5%) of patients with this type of fracture admitted to the institution where the study was conducted. The methods of the National Swedish Hip Fracture Register were followed because of its reported value (Thorngren, 1993). It was anticipated that the audit would help to identify risk factors which affect the treatment outcomes of patients with FNF and to compare results with other countries. Furthermore, it makes it possible to investigate if the differences in patients' demography, social status, and method of treatment, nursing and rehabilitation would have an effect on the outcome. It would also enable an analysis of a need for change in practice based on such comparisons.

### Aim of the study

The aim of this study was to undertake an audit of patients with FNF treated in KMH for a period of one year, and to analyze their outcomes after 4 months, using to the Swedish National Hip Fracture Register.

### Methods

The study used a prospective audit design and was approved by the ethics committee of the institution in which it was undertaken. Patients with FNF admitted to the institution were asked to participate in the study by an orthopedic nurse (RV). Participants were provided with a Volunteer Information Sheet and gave written consent to participate in the study.

### Subjects

During the period of January 1, 2008 to December 31, 2008 all patients admitted with FNF to Kaunas Medical University Hospital were included. All participants had sustained low energy trauma and were older than 55 years.

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