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GENDER DIFFERENCES IN PATIENTS WITH HIP FRACTURE – ASPECTS ON CARE AND RECOVERY

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ABSTRACT

Hip fractures in the elderly are common and impose a substantial burden on the healthcare system. This fracture population consists of many subgroups that often require differentiated and extensive acute and postfracture care. The aim of this thesis was to basically characterise a hip fracture population at time of admission, present postoperative results and discuss aspects that may influence recovery. Gender differences are specifically addressed.

Study I, II and IV derive from a consecutive series of 2213 patients with hip fracture admitted to four major hospitals in Stockholm, while Study III was a small pilot study.

In *Study I* we investigated the effect of time-to-surgery on: ability to return to own home, incidence of pressure ulcers, length of stay (LOS), and mortality. Patients who had surgery within 24, 36 or 48 hours were compared with those who had surgery later. The ability to return to own home was affected in patients who had to wait longer than 36 and 48 hours. The incidence of pressure ulcers and LOS increased at all time limits.

In *Study II* we investigated gender differences in two subgroups, characterized by normal cognitive function versus cognitive dysfunction, and whether such differences influenced patient ability to: return to own home, regain walking ability and perform activities of daily living (ADL). Cognitive function was assessed by the Short Portable Mental Status Questionnaire (SPMSQ). Dysfunction was equally common by gender. Patients with normal function (SPMSQ 8-10) were younger and healthier, resided more often in their own homes and were able to manage ADL independently, with no gender differences. In patients with dysfunction (SPMSQ 0-7), men had more comorbidity on admission, greater loss of walking ability and higher mortality after the fracture episode. We found that cognitive status was the overarching most important factor for predicting outcome.

In *Study III* we examined gastric emptying time of 400 ml carbohydrate rich drink in ten elderly women with acute hip fracture, and compared results with two reference groups of healthy women. The mean half gastric emptying time in the study group was 57 ± 5 (39-82) minutes, to be compared with 58 ± 4 (41-106) and 58 ± 5 (33-72) in the two reference groups. No adverse event was observed during anesthesia. Consequently, it should be possible to give patients a carbohydrate-rich drink before surgery instead of ordering strict fasting (NPO), which in turn could improve the patients' chances to recover and regain prefracture status.

In *Study IV* we focused on gender differences in complications; specifically on factors associated with common general complications. Complications were common with an incidence of 59% in men and 56% in women (ns). Most common were urinary tract infection, pressure ulcer, cardiac complications and pneumonia. Male gender emerged as an independent risk factor for suffering from pneumonia, and female gender for urinary tract infection. Besides gender, time-to-surgery, cognitive function, cardiovascular and pulmonary disease on admission were independent risk factors for suffering complication.

In conclusion, there are gender differences among patients admitted to a hospital for acute hip fracture, both with regard to status on admission and outcome. Cognitive dysfunction, equally common among women and men, has a major impact on incidence of complication and functional recovery. Men with cognitive dysfunction are at greater risk. With increased awareness of risk factors and gender bias, along with reduced waiting time for surgery, it should be possible to decrease complication incidence and improve outcome. We found no evidence for prolonged gastric emptying time of a carbohydrate-rich beverage, which implies it may be possible to provide patients with a carbohydrate-rich drink before surgery instead of adhering to strict fasting.

Key words: Hip fractures; Gender differences; Cognitive disorders; Comorbidities; Complications; Gastric emptying