

ABSTRACT

FEMORAL NECK AND COLLES OSTEOPOROTIC FRACTURE INCIDENCE IN WOMEN ABOVE 50 YEARS OF AGE AT ORTHOPAEDIC AND TRAUMATOLOGY DEPARTMENT RSUD DR SOETOMO

Osteoporosis is a systemic skeletal disorder that is estimated to have been suffered by more than 200 million people worldwide. There are two categories of osteoporosis, namely primary and secondary osteoporosis. Primary osteoporosis is the most common and is associated with aging and menopause in women. The decline in estrogen levels after menopause tends to accelerate bone loss due to aging. The main complication of osteoporosis is increased susceptibility to fractures of the hip, forearm and vertebrae. The risk of osteoporotic fractures is mainly determined by the age and bone density.

One method to predict bone density is using Singh Index. By observing trabecular pattern of anteroposterior femoral neck radiographic image, Singh Index provides a semi-quantitative predictions of osteoporosis. Former results differs about the reliability of Singh Index to determine osteoporosis. Researcher aims to find out the incidence of femoral neck and colles fracture, patient's age characteristics, the correlation between the duration of menopause and bone density assessed using Singh Index to the incidence of these fractures.

Observational with cross sectional design was chosen for this descriptive and analytic study. Sampling method used was total sampling of femoral neck fractures or colles fracture patient at the Outpatient Clinic of Orthopedics and Traumatology Department RSUD Dr. Soetomo since June to December 2016. 11 subjects were obtained. Subjects information were collected from the subject's medical record. The variables studied were the incidence of fractures, age, duration of menopause, and bone density measured using Singh Index.

This study shows the incidence of femoral neck fractures exceeds that of Colles fracture, 6 (54.5%) subjects suffered femoral neck fractures and 5 (45.5%) suffered Colles fracture. The mean age of subjects obtained from this study was 65.64 ± 8.98 years, with the greatest incidence of fractures are at the 60-69 years age group. This study showed the average duration of menopause was 17.18 ± 9.45 years, the shortest duration is 0 years, while the longest being 32 years, with the largest incidence of femoral neck fractures and Colles fracture at the 11-20 years age group. Lowest bone density observed was grade I and the highest at grade III, we can conclude that the entire sample were osteoporotic. The most frequently observed Singh Index grade in the samples was grade II. The results of Spearman Rank Corellation test showed a significant corellation ($p = 0.039$) between the bone density measured using Singh Index variable and the incident of the femoral neck fractures variable, but no significant corellation was found ($p = 0.718$) between the duration of menopause and the incidence of the femoral neck fractures and Colles fracture.

The next studies are expected to cover longer duration so that the samples obtained will be larger and represent the population better. Further research is also expected to add a control group.

Keywords: *osteoporosis, menopause, singh index, femoral neck fracture, colles fracture*