Korelasi antara asupan kalsium, indeks massa tubuh, kapasitas fisik dengan densitas massa tulang lumbar dan femur wanita usia lanjut di panty werda = The correlation between calcium intake, body mass index and physical capacity with lumbar and femoral bone mass density of elderly women in nursing house

Saragih, Arlyando Hezron, author

Abstrak

Latar Belakang. Densitas tulang yang rendah pada usia lanjut antara lain dipengaruhi oleh gangguan produksi dan metabolisme vitamin D, konsumsi alkohol, aktivitas fisik yang kurang, indeks massa tubuh (IMT) yang rendah, merokok yang berlebihan dan asupan kaisium yang rendah. Asupan kalsium, indeks massa tubuh dan kapasitas fisik diketahui berpengaruh pada densitas massa tulang.Korelasi antara asupan kaisium, IMT dan kapasitas fisik dengan densitas massa tulang masih kontroversi dan di Indonesia masih belum banyak diteliti khususnya di Panti Werda.

Tujuan. Mengetahui korelasi asupan kalsium, IMT, kapasitas fisik dengan densitas massa tulang lumbal dan femur wanita usia lanjut serta gambaran densitas massa tulang lumbal dan femur, jumlah asupan kalsium, gambaran IMT,dan kapasitas fisik wanita usia lanjut di Panti Werda.

Metodalogi. Studi potong lintang dilakukan pada wanita usia lanjut (?60 tahun) di Panti Werda. Subyek penelitian didapat dengan metode cluster random sampling dan yang sesuai dengan kriteria inklusi. Kriteria inklusinya adalah berusia 60 tahun atau lebih, jenis keiamin perempuan, masih dapat mandiri (ADL Barthel >16), dan bersedia ikut daiam penelitian. Dilakukan uji korelasi Pearson dengan aiternatif uji korelasi Spearman jika sebaran data tidak normal untuk mengetahui korelasi antara asupan kalsium, IMT dan kapasitas fisik dengan densitas massa tulang lumbal dan femur.

Hasil. Selama periode Maret-Mei 2005 dilakukan penelitian terhadap 51 wanita usia lanjut di 2 Panti Werda Jakarta dan Bekasi. Median usia 70,5 (7,5) tahun, median asupan kalsium 283 gram/hari, IMT 22,28 (4,2) kg/m2 dan kapasitas fisik sebesar 4,8(1,6) Metz. Sedangkan rerata densitas tulang lumbal 0,842(0,I64) gramlcm2 dan densitas tulang femur 0,652(0,097) grarnlcm2. Didapatkan korelasi bermakna antara IMT dengan densitas massa tulang lumbal dan femur (r = 0,677 ; p = 0,000 dan r = 0, 508 ; p = 0,000), dan tidak didapatkan korelasi antara asupan kalsium dengan densitas massa tulang lumbal dan femur (r = 0,146 ; p = 0,308 dan r = 0,096 ; p = 0,501) dan kapasitas fisik dengan densitas massa tulang lumbal dan femur (r=0,016; p=0,913 dan r=0,143 dan nilai p=0,318).

Kesimpulan. Didapatkan korelasi antara IMT dengan densitas massa tulang lumbal dan femur sedangkan korelasi antara asupan kalsium dan kapasitas fisik dengan densitas tulang lumbal dan femur wanita usia lanjut di Panti Werda belum dapat dibuktikan. Prevalensi densitas tulang lumbal dan femur wanita usia lanjut di panti werda Jakarta dan Bekasi berkurang sebesar 100% dan 99,8%., asupan kalsiumnya rendah, indeks massa tubuh normal dan kapasitas fisik tingkat menengah.

<hr>Backgrounds

Low bone density in elderly may be caused by decreased production and metabolic dysfunction of vitamin D metabolism, alcohol consumption, decreased physical activity, low BMI, excessive smoking, and low calcium intake. Calcium intake, BMI and physical capacity had already been known to have influence on BMD. The correlation between calcium intake, BMI and physical capacity with BMD is still controversial and there is not much data in Indonesia regarding of it especially in elderly population.

Objective

To investigate the correlation between calcium intakes, body mass index and physical capacity with lumbar and femoral bone mass density of elderly women in nursing homes.

Methods

A cross sectional study was conducted in elderly women in nursing homes. Subjects were obtained by cluster random sampling method and fulfilled inclusion criteria Inclusion criteria were age more than 60 years old, female, and Barthel index >16. We have done Pearson correlation test with Spearman test as alternative if data distribution was not normal.

Result

A cross sectional study was conducted on 51 elderly women in 2 nursing homes in Bekasi between March and May 2005. Median age was 70.5 years, median calcium intake 283 gram/day, BMI 22.28 ± 42 kg/m2 and physical capacity 4.8 ± 1,6 metz. Mean of lumbar BMD was 0.842 ± 0.164 gram/cm2 and mean femoral BMD was 0.652 ± 0.097 gram/cm2. We found significant correlation between BMI and lumbar and femoral BMD (r).677;p).000 and r =508; p=0.000) and there was no correlation between calcium intake and lumbar and femoral BMD (rO.146;p-0.000 and r=0.096;p=0.50 l). There were no correlation found between physical capacity and lumbar and femoral BMD (r).016;p 0.913 and r-0.143 and p O.318).

Conclusion

This study showed correlation between BMI and lumbar and femoral BMD. We found no correlation between calcium intake and physical capacity with femoral and lumbar BMD in elderly women in nursing homes in Jakarta and Bekasi. Prevalensi of lumbar BMD and femoral BMD of elderly women in nursing homes in Jakarta was decreased (100% and 99,8%).Calcium intake was low, BMI was normal and physical capacity was moderate level.