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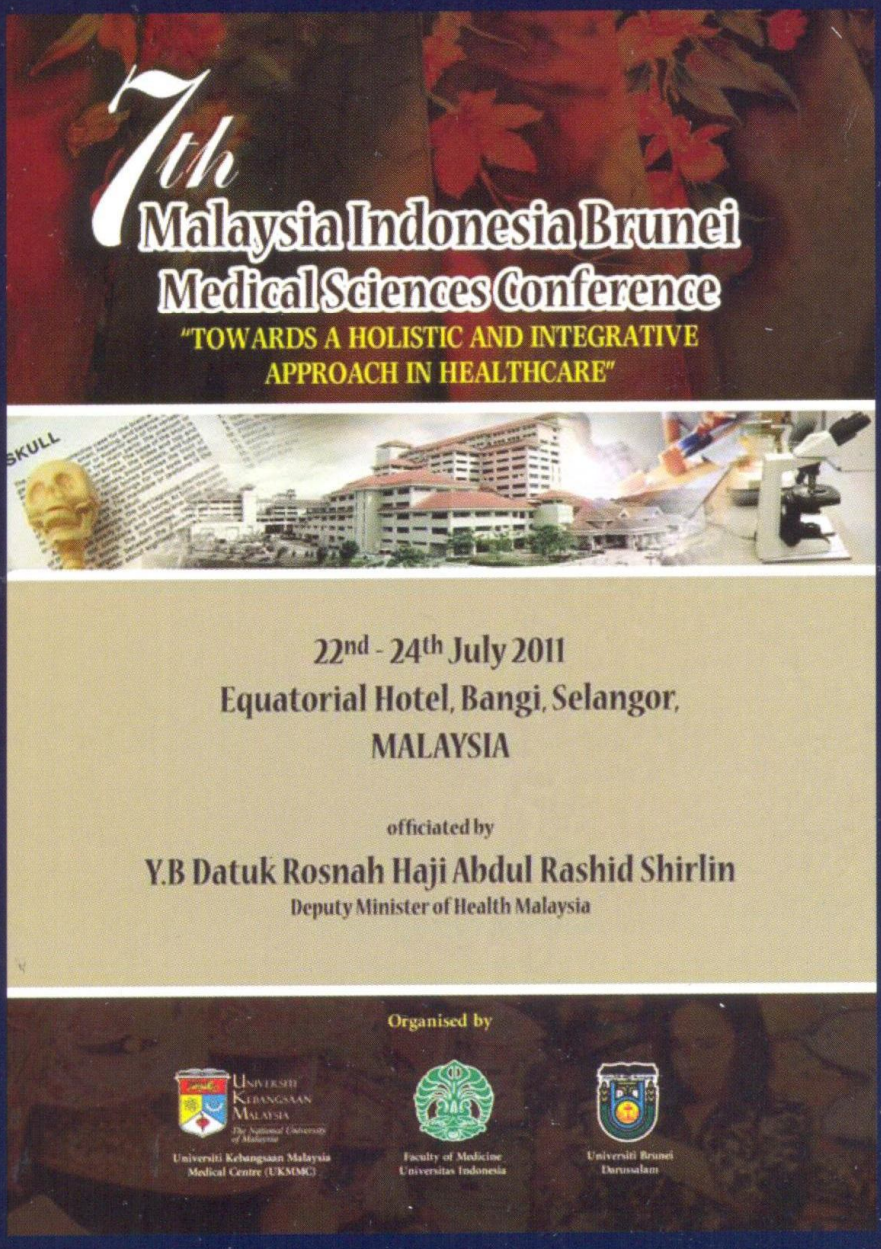

FACTORS CONTRIBUTING TO AGE-RELATED BONE LOSS AMONG MALAYSIAN MEN

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Background:
Involutional osteoporosis is a condition confronted by many elderly men in Malaysia. This study aimed to determine several factors contributing to age-related bone loss so that suitable intervention may be administered to prevent the progression of osteoporosis among Malaysian elderly men.

Materials and Methods:
A total of 759 healthy Malaysian Chinese and Malay men age 20 years old and above were recruited. Their body anthropometry and quantitative ultrasound bone density values were determined. Blood was collected for biochemical analysis. Subjects were also required to answer a questionnaire to assess their lifestyle and level of physical activity.

Results:
The results indicated a significant correlation between age and bone density ($r=-0.306$, $p<0.001$), serum total calcium level ($r=-0.320$, $p<0.001$), serum inorganic calcium level ($r=-0.166$, $p<0.001$) and serum total testosterone level ($r=-0.091$, $p<0.05$). Bone density was significantly correlated with serum total calcium level ($r=0.170$, $p<0.001$), total testosterone level ($r=0.074$, $p<0.05$) and total physical activity level ($r=0.089$, $p<0.05$). Bone density and serum total calcium level of Chinese men was constantly lower than Malay men but significant differences could only be seen in the total calcium level for men aged 40 years old and above.

Conclusion:
This suggested that the difference in bone density between the two ethnic groups may due to differences in calcium metabolism. Age-related bone loss among Malaysian men may be prevented by calcium supplementation, increased physical activity and testosterone replacement therapy. Further studies on the relationship of age and bone density with parathyroid hormone, biomarkers of bone metabolism, bioavailable testosterone and estradiol are being conducted.

Keywords:
male osteoporosis, total testosterone, serum calcium, physical activity