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Bone mineral density difference among reproductive women versus post-menopausal women of lahore, pakistan

Muhammad Jamil Sabit, Rida Jamil Sabit, S H M Asad Siddiq and Umer Maqsood
Al Razi HealthCare, , Pakistan

Background: In Pakistan, approximately 9.9 million people suffer from Osteoporosis, out of which 7.2 million are women alone. It has been established that low bone mineral density (BMD) accounts for Osteoporosis. This trend is mostly seen in the women of postmenopausal age.

Objective: The purpose of this study is to evaluate and compare the differences in BMD between reproductive and post-menopausal women from Lahore district.

Rationale: The rationale of the study is to find out whether there is any significant difference in the BMD among reproductive and post-menopausal women in the population of Lahore, Pakistan as in western societies these variations are minimized with awareness programs about role of exercise, proper diet and supplements. This would be the first step in Pakistan and can be helpful in further studies to assess the other influencing factors. Inclusion criteria includes the study was conducted on women with complaint of generalized aches and pain after the three-month course of NSAID in reproductive age group and postmenopausal women after age 51. Exclusion criteria includes women who are pregnant; who had any recent gastrointestinal contrast studies; bilateral hip replacements or bilateral hip pins or screws would prevent the hip sites from being scanned and; metallic rods or spinal fusion devices in the lumbar spine prevent scanning.

Materials & Methods: A cross sectional survey was performed on 196 women of whom 98 were reproductive and 98 postmenopausal. Convenient sampling was employed using the bone density scan questionnaire and DEXA scan. Using the information gained from these two, T scores were calculated. The population under study consisted mainly of the females visiting outpatient Department of Pain Center Mayo Hospital, Lahore, Al- Noor Diagnostic Center and Punjab Medical Center. Further, the data was researched and analyzed using SPSS. The mean and standard deviations of T-score values at lumbar spine and hip were extrapolated to reproductive and post-menopausal women and used to assess the differences in their BMD. According to WHO, the normal value of T- score is -1.0 SD, the value for osteopenia is T-score between -1.0 and -2.5 SD and the value for osteoporosis is T- score of -2.5 SD or below.

Result: The mean age of reproductive women was 41.00 ± 9.69 (50%) and postmenopausal women 62.30 ± 6.37 (50%). The aim of the study was to evaluate the BMD difference among these two groups of women. The T- score at lumbar spine shows the P value of 0.01, which means that we can safely come to a conclusion that there is a significant amount of difference in BMD between the groups of reproductive and postmenopausal women. However, the T-score at hip shows a P value of 0.08, which means that there is no essential difference in BMD between reproductive and post-menopausal women.

Conclusion: This concludes that there is no doubt a profound difference of BMD between reproductive and post-menopausal women, based on the p value of 0.05. To emphasize, the average T-score for lumbar spine in reproductive and post-menopausal women is 0.01 and it reinforces the contrast of BMD in this group. On the other hand, the T- score for hip bone in reproductive and post-menopausal women is 0.08 which further reasons the non-difference in BMD.

painspecialistpk@yahoo.com