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EVALUATING BONE QUALITY AND BONE MASS IN PATIENTS WITH TYPE 2 DIABETES AND ORAL GLUCOCORTICOID THERAPY: THE BUSHEHR ELDERLY HEALTH (BEH) PROGRAM

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Objective: Trabecular bone score (TBS) is a novel texture parameter that measures pixel gray-level variations within the spine DXA image and provides surrogate measures of bone microarchitecture. TBS is predictive of fracture in patients with secondary osteoporosis, including glucocorticoid-induced osteoporosis, and patients with type 2 diabetes mellitus whose fracture risk is often underestimated by BMD.

Methods: The present study was conducted within the framework of the Bushehr Elderly Health (BEH) programme, a population-based prospective cohort study being conducted in Bushehr, a southern province of Iran. Participants (n=2246) were divided into 4 groups including controls, subjects with a diagnosis of diabetes but not taking glucocorticoid as DM group, subjects who had taken glucocorticoid for >3 months but who did not diabetic were included in the GC group, and Subjects with both diabetes and glucocorticoid use were included in the GC+DM group. TBS scores were categorized into three categories indicating the quality of the bone microarchitecture according to the following thresholds (degraded [≤ 1.23], partially degraded [>1.23 to <1.35], and normal [≥ 1.35]). Between-group comparison was done using 1-way analysis of variance; *dunnnett test* was used to compare the TBS and BMD of control with other groups.

Results: There were 684 subjects in the control group (282 women and 400 men), 436 subjects in the GC group (277 women, 159 men), 746 subjects in the DM group (326 women, 420 men), and 548 subjects in the GC+DM group (366 women and 186 men). Lower TBS values was observed in GC and GC+DM groups compared to the control group and participants in DM group had highest BMD. Out of 1596, participants who were considered as normal regarding BMD, 928(58%) classified as non-normal (partially or completely degraded) regarding TBS. nearly 55% and 66% of participants with normal BMD in DM and DM+GC groups categorized as degraded, respectively.

Conclusion: Prevalence of subjects with normal BMD was higher in DM group and regarding TBS diabetic participants who take glucocorticoid showed a higher percentage of degraded compared to control group.