



Updates on the Role of Bone Turn Over Markers and Other Risk Factors in The Assessment of Fracture and Osteoporosis Risk

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SUMMARY. Osteoporosis is a global health problem and amplified especially in developed countries. The objective of this study was to investigate the prevalence of osteoporosis and its related risk factors in community of Karachi-Pakistan. A cross-sectional survey based study was performed during the period of March 2019 to December 2019. Two thousand six hundred and ninety-seven (N = 2,679) participants aged 35 years and older were selected through convenience sampling technique from orthopedic ward of different private and government hospitals at Karachi-Pakistan. Bone mineral density (BMD) measurement was performed using a non-invasive “heel ultrasound” method with the help of sonometer. T-scores were recorded to categorize the study population as “normal”, “osteopenia” and “osteoporosis”. Risk factors associated with osteoporosis were also analyzed using a standardized questionnaire. Overall prevalence of osteoporosis in the whole study population was 29.5% with 18.1% for men and 38% for women. Risk of osteoporosis was significantly associated with family history of osteoporosis (OR, 1.75), regular smoking (OR, 2.53), post-menopause (OR, 2.32), delivery after 30 years of age (OR, 2.21), amenorrhea (OR, 2.15), high usage of beverages especially soft drinks (OR, 1.79), high fat diet (OR, 2.01), arthritis (OR, 4.02), obesity (OR, 3.71) and hormonal imbalances (OR, 2.91) at 95% confidence interval with $p < 0.05$. However, risk of osteoporosis was decreases with daily exercise (0.25), use of calcium supplements (0.47), hormonal therapy (0.25) and in graduate individuals (0.22). The prevalence of osteoporosis was found much higher in female compared to male population. Risk of osteoporosis was significantly associated with family history, smoking, menopause, high usage of beverages (especially soft drinks), high fat diet, arthritis, obesity and hormonal imbalances.

RESUMEN. La osteoporosis es un problema de salud mundial y se acentúa especialmente en los países desarrollados. El objetivo de este estudio era investigar la prevalencia de la osteoporosis y los factores de riesgo conexos en la comunidad de Karachi-Pakistán. Durante el período comprendido entre marzo de 2018 y diciembre de 2018 se realizó un estudio basado en encuestas intersectoriales. Dos mil seiscientos setenta y nueve participantes (N = 2,679) de 35 años o más fueron seleccionados mediante técnicas de muestreo de conveniencia de la sala ortopédica de diferentes hospitales privados y gubernamentales en Karachi, Pakistán. La medición de la densidad mineral ósea (DMO) se realizó utilizando un método no invasivo de “ultrasonido de tacón” con ayuda de sonómetro. Se registraron puntuaciones T para categorizar la población del estudio como “normal”, “osteopenia” y “osteoporosis”. También se analizaron los factores de riesgo asociados a la osteoporosis mediante un cuestionario normalizado. La prevalencia global de osteoporosis en toda la población del estudio fue del 29,5%, con un 18,1% para los hombres y un 38% para las mujeres. El riesgo de osteoporosis se asoció significativamente con la historia familiar de osteoporosis (OR, 1,75), tabaquismo regular (OR, 2,53), posmenopausia (OR, 2,32), parto después de 30 años de edad (OR, 2,21), amenorrea (OR, 2,15), uso elevado de bebidas, especialmente refrescos (OR, 1.79), dieta rica en grasas (OR, 2.01), artritis (OR, 4.02), obesidad (OR, 3.71) y desequilibrios hormonales (OR, 2.91) con un intervalo de confianza del 95% con $p < 0.05$. Sin embargo, el riesgo de osteoporosis disminuyó con el ejercicio diario (0,25), el uso de suplementos de calcio (0,47), la terapia hormonal (0,25) y en los graduados (0,22). La prevalencia de osteoporosis fue mucho mayor en las mujeres que en los hombres. El riesgo de osteoporosis se asoció significativamente con la historia familiar, tabaquismo, menopausia, uso elevado de bebidas (especialmente refrescos), dieta rica en grasas, artritis, obesidad y desequilibrios hormonales.

KEY WORDS: bone health, case series, fracture risk assessment tools, Karachi-Pakistan, prevalence.

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