

EVALUATION OF THREE RISK ASSESSMENT TOOLS IN DISCRIMINATING FRACTURE STATUS AMONG HEMODIALYSIS PATIENTS

Chang An-jin, Qian Ying*, Chen Xiao-nong, Wang Wei-ming, Chen Nan

Department of Nephrology, Ruijin Hospital affiliated to Shanghai Jiaotong University School of Medicine, Shanghai, China

INTRODUCTION AND AIMS

Our study aims to assess the ability of three widely used tools (bone mineral density (BMD), osteoporosis self-assessment tool for Asians (OSTA), and fracture risk assessment tool (FRAX)) to discriminate fracture status in hemodialysis patients.

METHODS

We enrolled 136 hemodialysis patients. BMD was tested using dual-energy X-ray absorptiometry (DXA) at lumbar spine and hip region. OSTA was calculated from weight and age. FRAX score was obtained through the website. Discriminative abilities of BMD, OSTA and FRAX in fracture status were assessed with receiver operator characteristic curves analysis.

RESULTS

There were total 16 fractures (11.76%) in 136 hemodialysis patients. BMD at any site (lumbar spine L1-L4, femoral neck and total hip) was independently associated with fracture. Areas under the curves of BMD (lumbar spine L1-L4, femoral neck, total hip), OSTA, FRAX1 (non-BMD model) and FRAX2 (BMD model) were 0.669 (95%CI, 0.583 to 0.747, P=0.0234), 0.708 (95%CI, 0.624 to 0.783, P=0.0014), 0.736 (95%CI, 0.654 to 0.808, P=0.0003), 0.686 (95%CI, 0.601 to 0.763, P=0.0078), 0.715 (95%CI, 0.631 to 0.789, P=0.0004), and 0.697 (95%CI, 0.613 to 0.773, P=0.0025), respectively. The differences of their performance were not significant.

CONCLUSIONS

All of the three risk assessment tools had the ability to discriminate fracture status among hemodialysis patients, but combination of FRAX and BMD did not improve the discriminative ability of BMD or FRAX alone.

