

Comparison of two methods in assessment of fracture risk of postmenopausal women with osteopenia

Martin Kužma, Eva Némethová, Zdenko Killinger, Juraj Payer

Comenius University, Faculty of Medicine, 5th Department of Internal Medicine, University Hospital, Bratislava, Slovakia



INTRODUCTION

More than half of osteopenic patients (pts) suffer from fracture (Fx), but BMD osteopenia is usually not considered for treatment initiation. FRAX is a tool that can identify pts with high Fx risk and can be used as an interventional threshold. Past few years, trabecular bone score (TBS), the bone quality determinant, is a promising method identifying the high risk patients according to degradation of trabecular bone. In addition, a few previous studies with FRAX adjusted for TBS shown the increased risks of major fracture and hip fracture.

OBJECTIVE & METHODS

Objective: Comparison of two methods, TBS and FRAX, in treatment consideration between postmenopausal women with osteopenia.

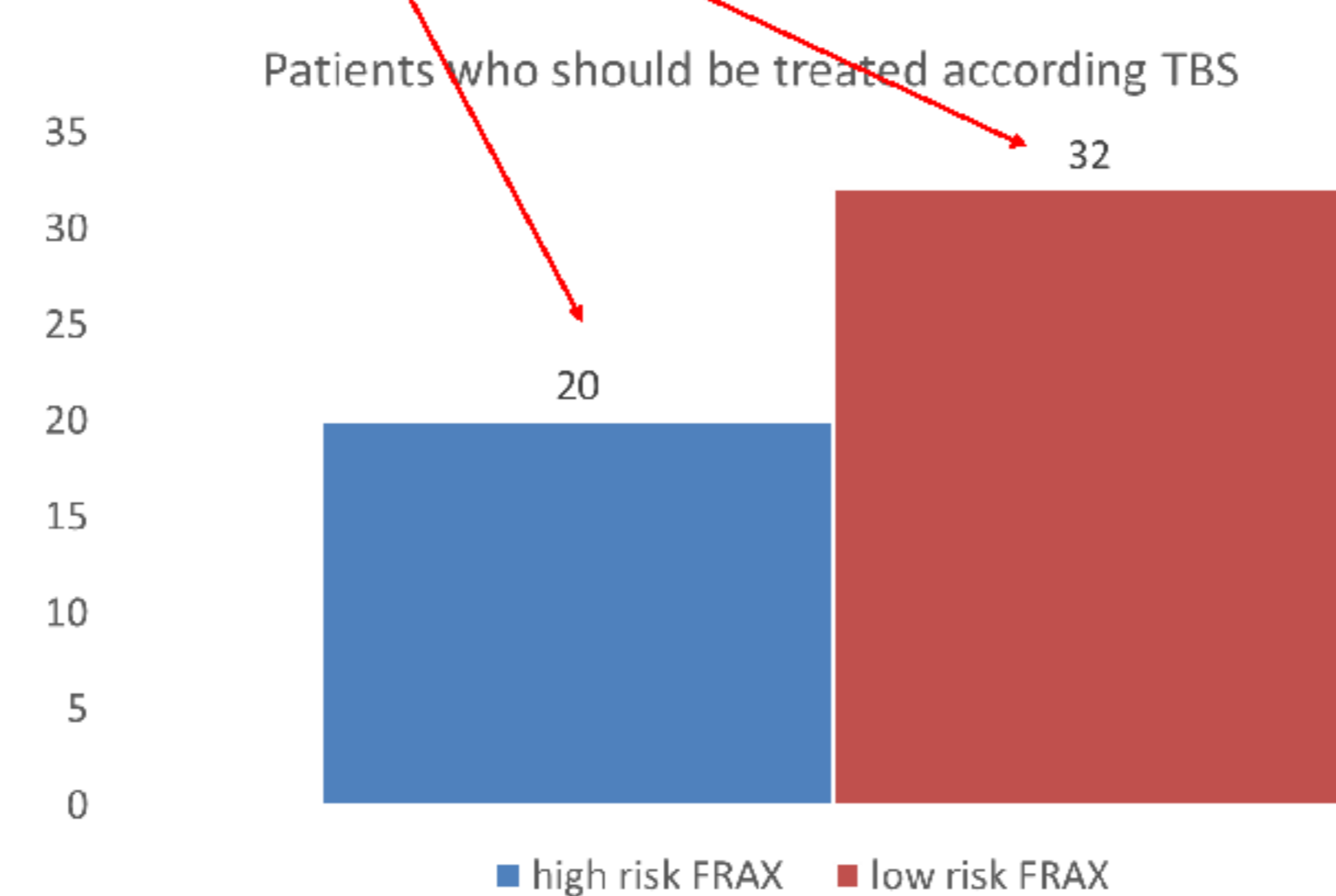
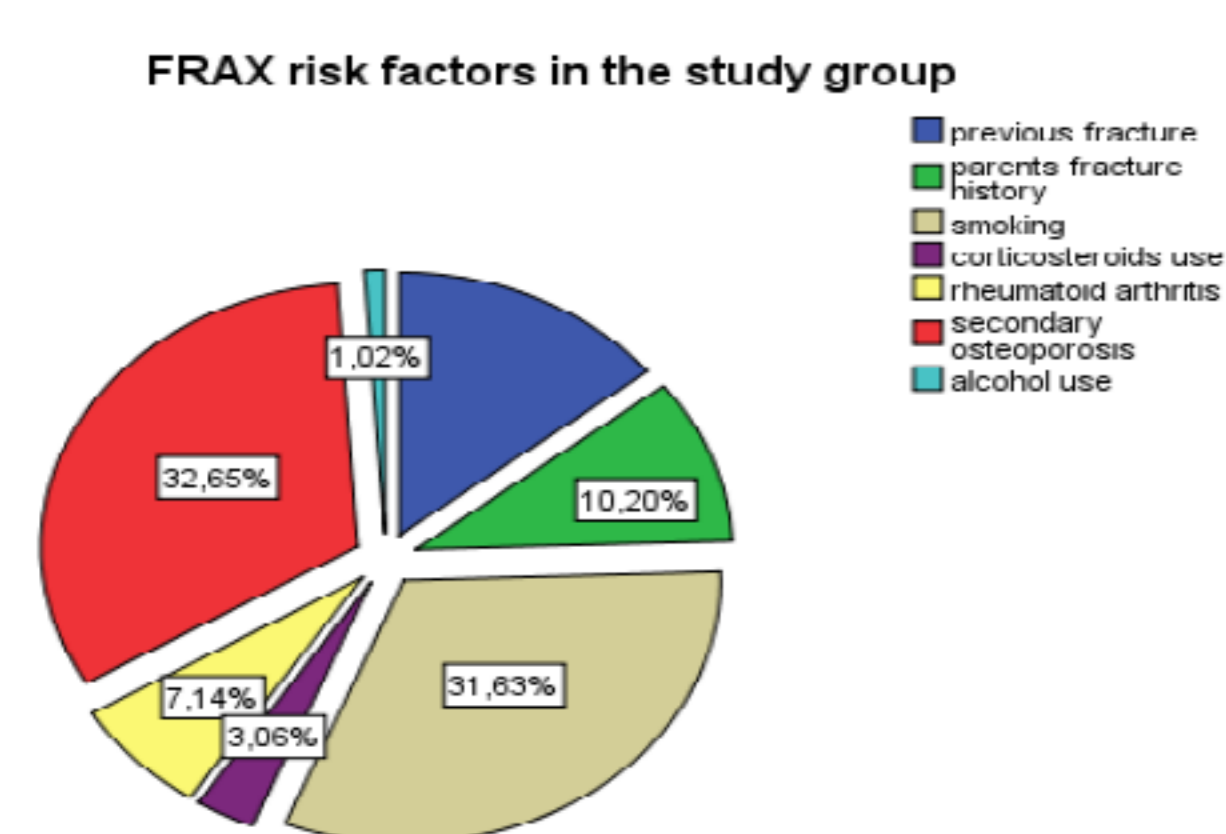
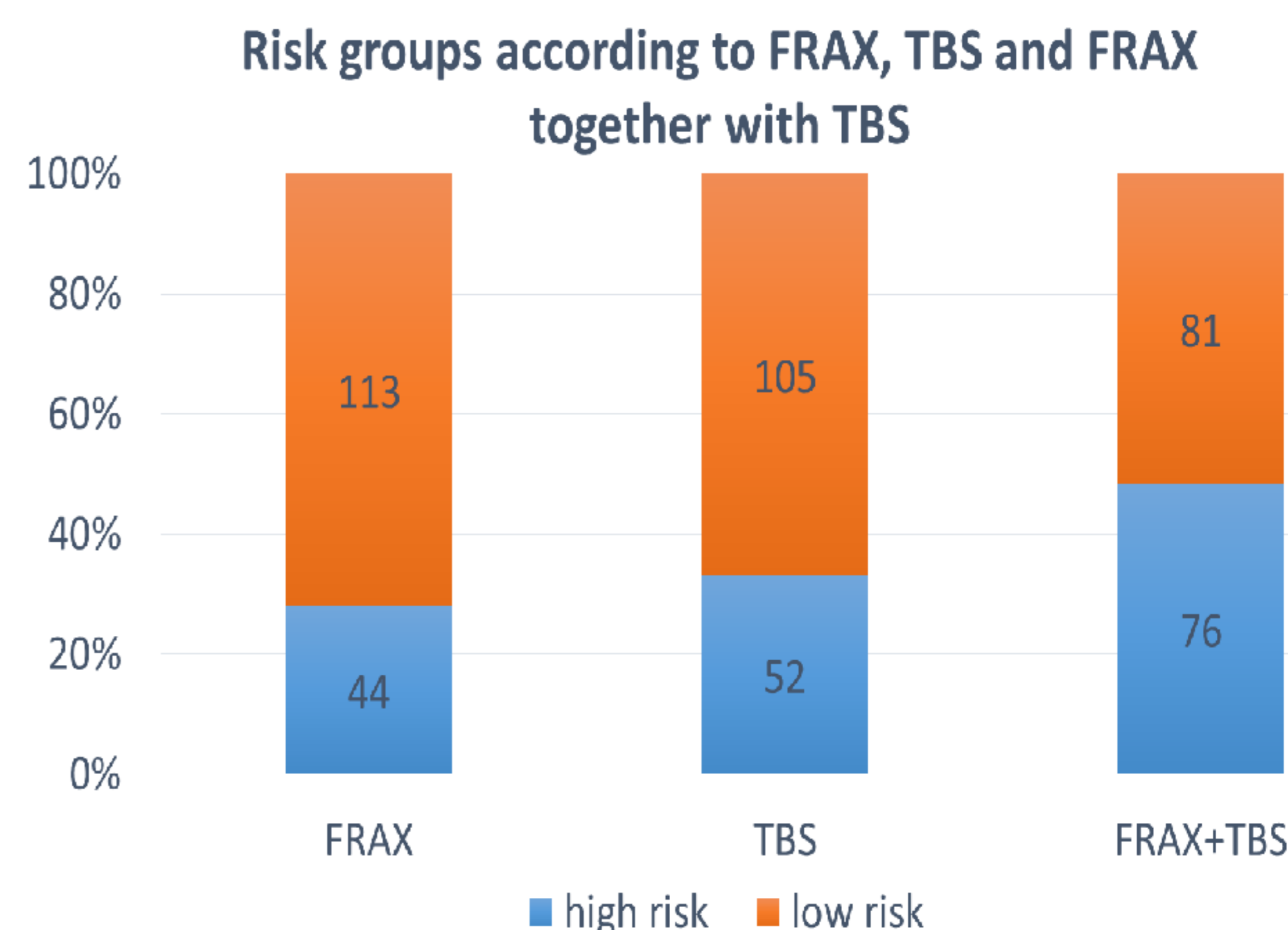
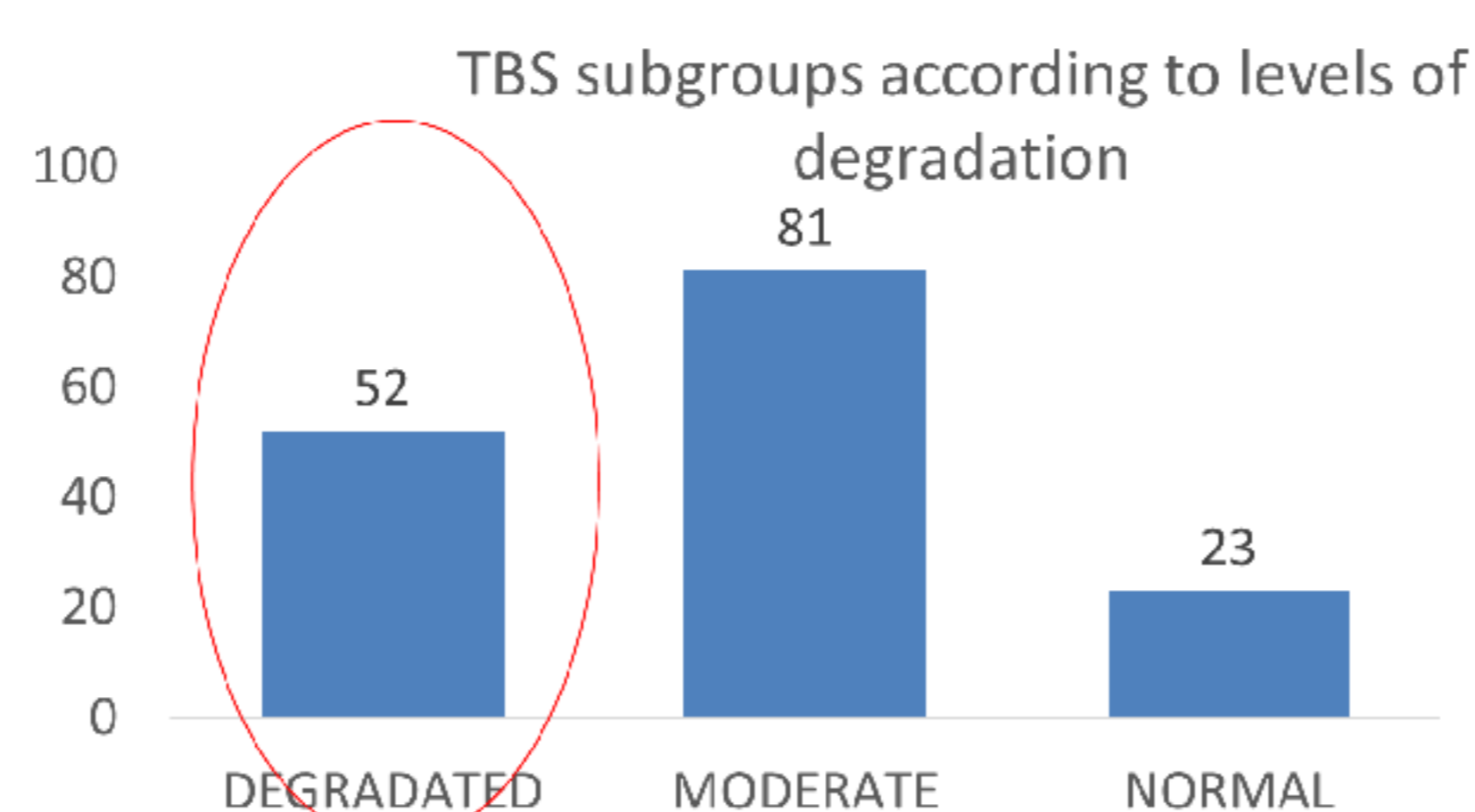
Methods: Osteopenic postmenopausal women defined osteopenic by WHO criteria (T-score -1 to -2,5) were retrospectively analyzed. Using National osteoporosis foundation (NOF) cutoff values of 20% for major osteoporotic fracture and 3% for hip fracture were used to consider patients at high absolute 10 years risk of Fx and considered for treatment. According to temporary consensus guidelines patients with BMD osteopenia + very low (degraded) TBS (<1,1) should be treated after secondary cause was excluded. TBS Insight® tool by MediMaps (France) was used to assess TBS derived from L-spine DXA scans.

Levels of TBS degradation

Degradation Description		TBS Range
NORMAL		Above 1.350
MODERATE	Grade 1	1.300 – 1.350
	Grade 2	1.250 – 1.300
	Grade 3	1.200 – 1.250
DEGRADED	Severe	1.100 – 1.200
	Highly Degraded	Below 1.100

RESULTS

	Mean	Std. Deviation
AGE (yrs)	65,90	10,182
WEIGHT (kg)	70,13	14,185
HEIGHT (cm)	162,23	7,045
BMD NECK (T-score)	-1,206	,7755
BMD L spine (T-score)	-1,468	,7244
FRAX- Risk of MAJ Fx (%)	8,93	4,124
FRAX- Hip Fx Risk	2,221	2,0555
TBS	1,24146	,142385



157 postmenopausal women (mean age 65,9 yrs, BMI 26,7 kg/m², T-score: neck -1,2 ; L-spine -1,4, TBS 1,24) were included. In total, by NOF cutoff 44 (28%) pts, who may be treated were identified. From that number 20 (12,7%) pts belonged to highly degraded TBS group. Another 32 (20,3%) patients with highly degraded TBS were identified in low risk FRAX group. In summary, TBS together with FRAX can identify 76 (48,4%) additional patients who should be considered for treatment.

CONCLUSIONS

In the present study, the FRAX tool was able to identify additional 44 (28%) patients in high fracture risk, which should be considered for treatment. From high risk FRAX group TBS identified 20 pts at increased risk of fracture and additional 32 patients from low risk FRAX group with degraded TBS who should be treated according to temporary consensus guidelines. FRAX with TBS was able to identify about 76 (48,4%) patients who should be treated. According to this study, addition of TBS to FRAX brings novel info in identifying high fracture risk patients with osteopenia.

