

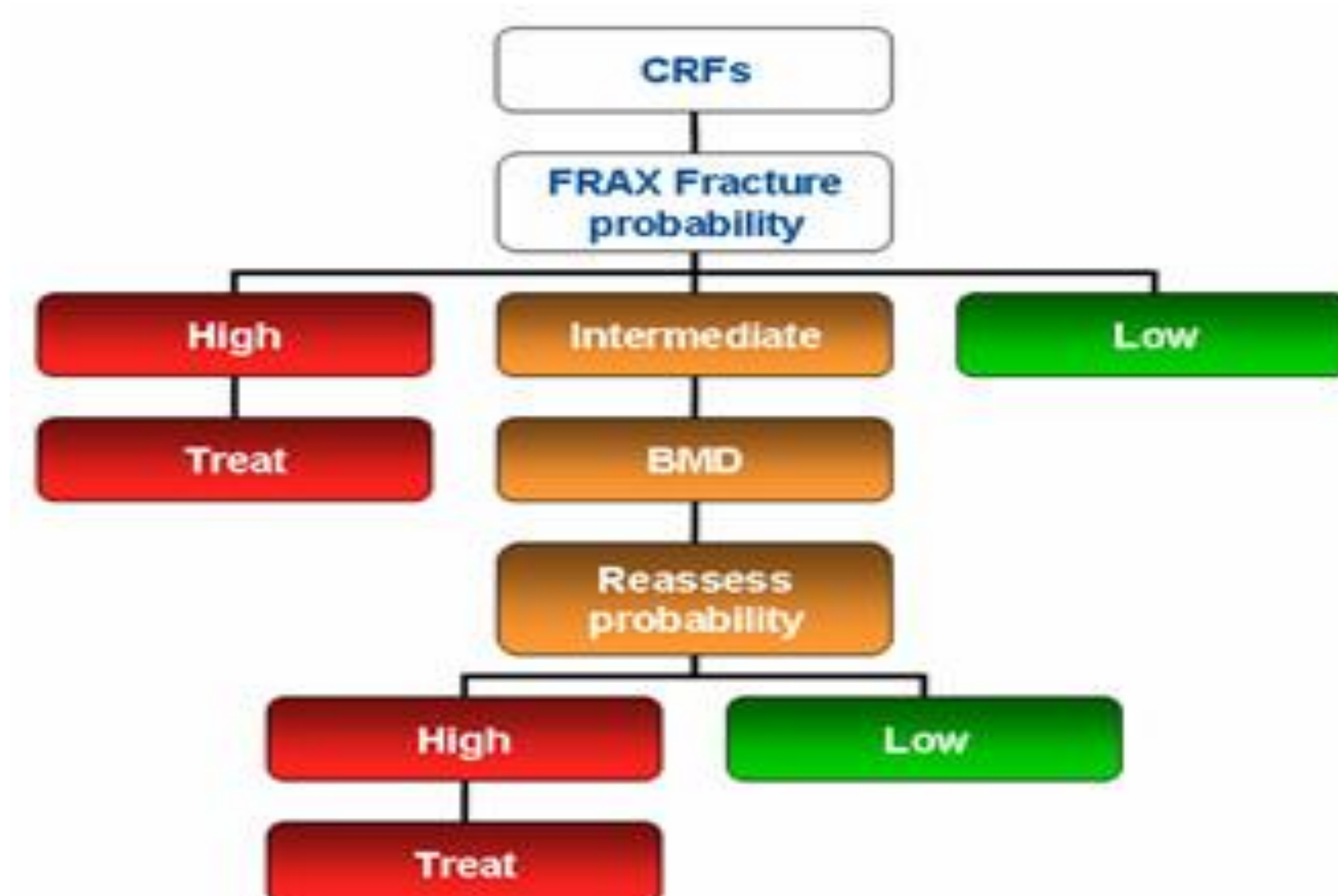
## Impact of the FRAX<sup>®</sup> tool and the NOGG guidelines on the indication of bone mineral density in Spanish postmenopausal women

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### INTRODUCTION

The National Osteoporosis Guideline Group (NOGG) recommends determine BMD in patients who present an intermediate risk of osteoporotic fracture using the FRAX<sup>®</sup> tool, follow-up for low risk, and treatment for high risk (figure 1). In 2011, 3163 BMD were performed in the Complejo Asistencial Universitario de León (CAULE). Since the cost for each BMD is 58.6€ (BOCYL 31/01/2011), annual spending could rise to €185,352. The aim was to assess whether fracture risk calculation would result in a reduction of BMD measurements made, and therefore in the costs.



**Figure 1. Management algorithm for the assessment of patients at risk of fracture**

### METHODS

Cross-sectional study in patients referred for BMD measurement in CAULE between April and December 2012. Data of risk factors included in the FRAX<sup>®</sup> were obtained using a questionnaire completed by the technical staff. The absolute risk of presenting a major or a hip fracture was calculated using the British FRAX<sup>®</sup> formula and NOGG guidelines. We excluded patients with current or previous treatments for osteoporosis.

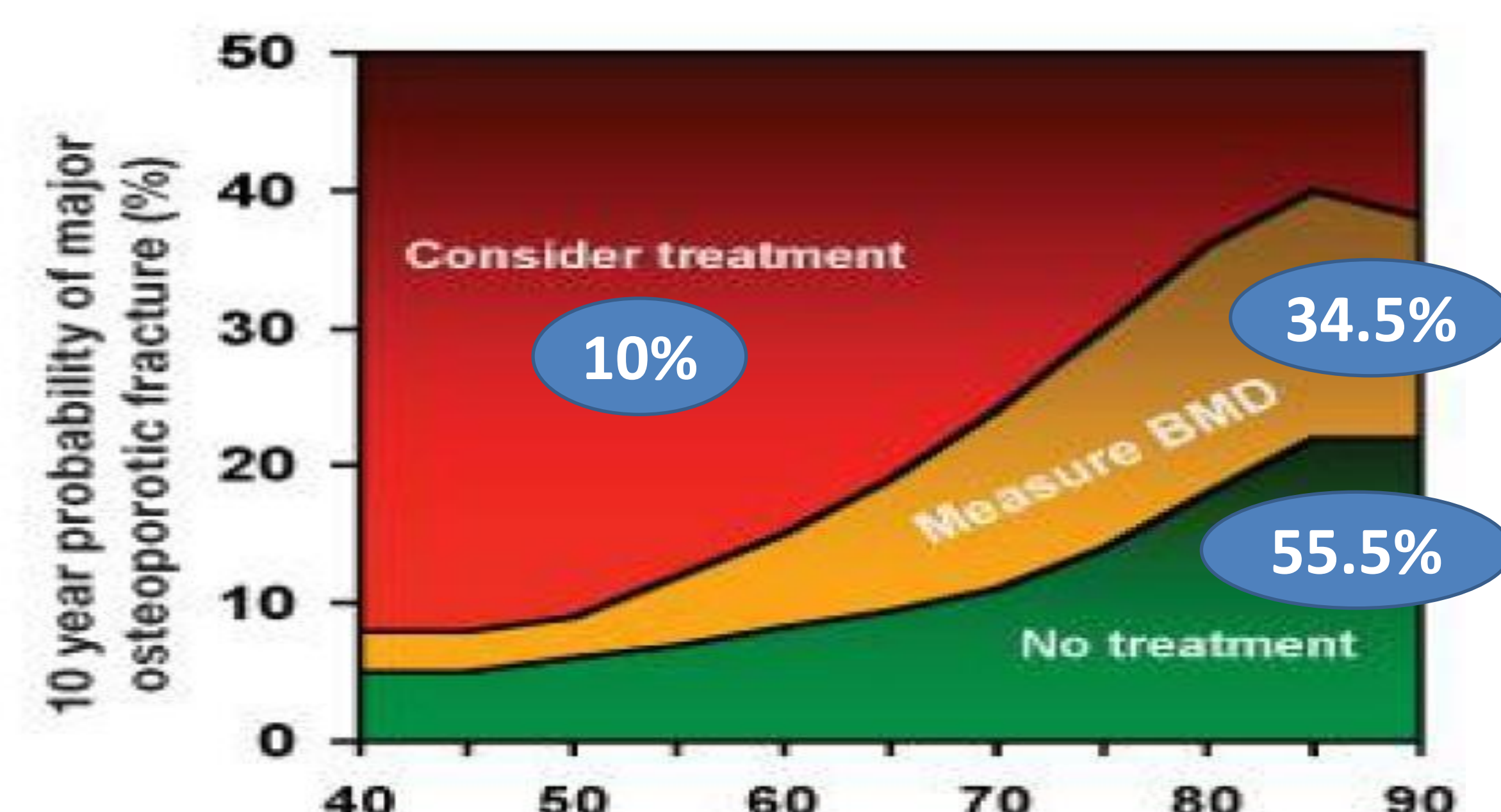
### RESULTS

We recruited 1163 patients, of whom 542 (46.6%) were untreated. 95% were women, with a median age of 60.2 years (Interquartile Range, IQR=14.44). Prevalence of risk factors included in the FRAX<sup>®</sup> tool can be seen in figure 2. The median risk for major fracture was 8.2% (IQR=9), and for hip fracture 1.3% (IQR=3). Applying the FRAX tool in combination with the NOGG guidelines 55.5% had low fracture risk, 34.5% intermediate risk and 10% high risk (figure 3). Extrapolation of the data shows that 30% of all BMD annually performed in CAULE could be avoided. This would mean a cost reduction of €55,605 per year.

Risk Factor	Percentage
Previous Clinical Fractures	20.1 %
Smokers	17.2 %
Risk Factors for Secondary Osteoporosis	15.7 %
Parents with Hip Fractures	15.3 %
Corticosteroids	9.4 %
Rheumatoid Arthritis	8.3 %
High-Risk Alcohol Consumption	2.2 %

### CONCLUSIONS

The application of the NOGG guidelines led to a decrease in BMD indications, reducing costs and improving the efficiency in management of osteoporosis.



**Figure 3. NOGG guidance – Assessment threshold**