

# The debate over the FRAX scale

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**C**linical judgement, empirical, intuitive and based on experience, is one of the pillars of clinical decision-making. Along with clinical tests (“evidence”), and at an equal level, it serves to adapt what science offers to the individual patient. Osteoporosis is no exception. For years, we clinicians have used a long list of clinical risk factors, some modifiable, others not, to evaluate in each patient how much risk we must counteract with our interventions in a typical cost-benefit analysis.

The problem is that the quantification of this risk has been difficult. Other fields of pathology have preceded us in the search for formulae which permit us to calculate the risk of an individual patient becoming ill, attributing its relative weight, if they have it, to each of the factors which play a role in the determining the risk. In the case of osteoporosis, the risk of fracture.

Numerous scales have come to be constructed with this intention in recent years. Scales such as ORAI, Fracture Index, etc., have enjoyed limited approval their use was complex, or because their predictive capacity was (or was seen to be) limited.

After a long gestation, the FRAX scale has been put at the clinicians' disposal.

Its immediate success remains certain because it has generated a fierce debate from the start. Other reasons explain the whys and wherefores of its impact. Based on a broad mega-analysis of prospective cohort studies, from a number of countries, it is more methodologically rigorous and internationally representative than any earlier studies have been. Endorsed by the OMS and with the prestige of its creators, it has been adapted to many countries and translated into their respective languages. In addition, it is clinically plausible since it introduces various elements demonstrated as key to the determination of risk of fracture, and allows the qualification of absolute risk at ten years in each case both for femoral fracture and for the principal fractures resulting from osteoporosis.

However, since the beginning there has been something lacking in the calculation of risk which it offers. Although it permits estimation independ-

ent of the measurement of bone density, its addition is important in order to refine the calculation. In this case, however, the measurement is limited to the femoral neck, often dissociated from more important deteriorations in other parts of the body, such as the spinal column, which is no less robust than the measurement of the whole femur. There are powerful independent predictors of risk which are not taken into account, such as, for example, the frequent occurrence of falls, or a diet highly deficient in calcium. The estimate of some factors is very approximate. Thus, having had one or a number of falls, having taken a very high or very low dose of corticoids, or the existence, or not, of some diseases strongly associated with osteoporosis, are all valued equally. What's more, its applicability remains limited to women not previously treated, excluding a great number of cases which we deal with daily. It is also certain that the epidemiological baseline for the incidence of fractures is approximate for the majority of the countries which have adapted the tool.

Two recent publications, based on the SOF (Study of Osteoporotic Fractures) and on the analysis of the placebo group of the pivotal study of alendronate (the FIT study), have started to open a crack in its credibility. Both studies have confirmed that the predictive capacity of using simply age + BMD or age + previous fracture<sup>1</sup> in one study, or age + BMD + vertebral fracture<sup>2</sup> in the other is equally correct as using the FRAX scale.

In Spain these limitations have similarly been detected by means of an analysis of a wide prospective cohort study. As much for its over- as for its under-evaluation of risk, in cases of extreme risk of fracture observed, the linearity of the tool is limited<sup>3</sup>.

What can we conclude? Above all we must congratulate those who have created the FRAX scale. Without a doubt it is a crucial advance in our clinical analysis of osteoporosis. Imperfect, of limited validity, with methodological defects, with telling shortcomings. And yet it represents the first global scale, which will mark a new paradigm in tackling osteoporosis, since it will be, without a doubt, the vertebral column on which we are going to work in the coming years. To perfect and

improve it in its applicability to specific countries is going to be the immediate task in its development. In the meantime, its judicious use, conscious of its limitations, will be a help in our clinical practice. As always, returning to clinical judgement.

### **Jesús Hurtado**

*It is inevitable that we dedicate some words to the memory of Jesús. No-one who knew him can dispute his qualities. A terribly human person, discreet, a hard worker, straightforward, affectionate, far-sighted, a scientific sage and doctor... All these descriptions, which are routinely applied to those who have died, most of the time simply because they are dead, are strongly applicable to Jesús. Exemplary in his life and in his passing towards death, he was a point of reference for all those who*

*knew, and also, loved him. For his immutable smile and for the peace he radiated. Let us all enjoy his memory.*

### **Bibliography**

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