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FRACTURE RISK ASSESSMENT INPOST-MENOPAUSAL WOMEN WITH FRAX TOOL

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ABSTRACT

In Postmenopausal women Osteoporosis is a silent killer and cause substantial disability later on mortality .FRAX which is FRACTURE RISK ASSESSMENT TOOL was developed by the WHO to be applicable to postmenopausal women which uses clinical risk factors, and country-specific fracture and mortality data to quantify a patient's 10-year probability of a hip or major osteoporotic fracture from several clinical risk factors (CRFs) without the measurement of femoral neck BMD.110post-menopausal women who attended the Saveetha obstetrics and Gynaecology department were included inthe study. After informed consent women were interviewed with Questions from the validated questionnaire.The collected details was entered in the official FRAX calculation tool without BMD and FRAX score was calculated. 64% women were between 45 to 55 years, 36% women were between 55 to 65 years of age. History of parental fracture was present in 5%, current smoking in5%, glucocorticoids intake in 8%.Rheumatoid arthritis in 4%.According to FRAX tool score 66% women comes under LOW RISK, 30 % comes under MODERATE RISK and 4% comes under HIGH RISK for major osteoporotic fracture. Probability of hip fracture 79% in LOW RISK, 14% MODERATE RISK GROUP and 6% HIGH RISK groups FRAX tool is cost effective tool to predict probability of fracture risk in post-menopausal women.

INTRODUCTION

In Postmenopausal women Osteoporosis is a silent killer and cause substantial disability later on mortality and it is a public health burden. Hence it is important to recognize those who are prone for fracture in a simpler way. FRAX which is FRACTURE RISK ASSESSMENT TOOL was developed by the WHO to be applicable to postmenopausal women which uses clinical risk factors, and country-specific Fracture and mortality data to quantify a patient's 10-year probability of a hip or major osteoporotic fracture from several clinical risk factors (CRFs) without the measurement of femoral neck BMD. 10-year fracture probability is estimated using age, body mass index, and CRFs without BMD.by assessing risk we candetermine which patients will benefit most from pharmacologic treatment.

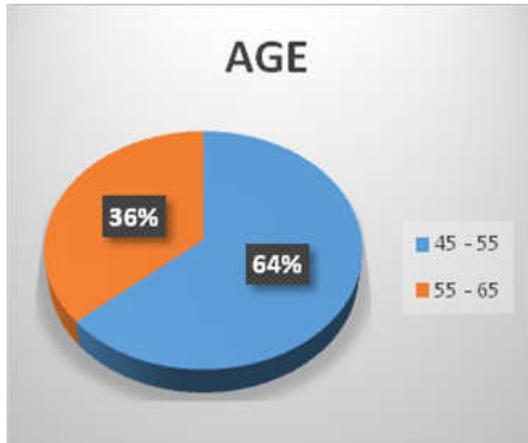
METHODS

A Prospective study was done in110 postmenopausal women not receiving any treatment for osteoporosis who attend Saveetha Medical College and Hospital OPD and IP

from 1st April 2017 to july2017.Aim of the study is to predict fracture risk in postmenopausal women using FRAX tool to give them counselling regarding fracture prevention strategies and to advise to further management. After informed consent women were interviewed with Questions from the validated questionnaire.The questionnaire includes age, sex, height, weight, BMI ,previous fracture, parent fractured hip, current smoking, glucocorticoids intake(equivalent to ≥ 5 mg of prednisolone for ≥ 3 months), rheumatoid arthritis, secondary osteoporosis (history of type 1 diabetes mellitus, osteogenesis imperfecta, long-standing untreated hyperthyroidism, menopause at <45 years of age, chronic liver disease, long-standing malnutrition), alcohol 3 more units per day. Height and weight will measured using professional medical scales. FRAX score of India model was used without BMD was calculated. High risk women to osteoporotic fractures was identified. The collected details was entered in the official FRAX calculation tool and Information obtained about the disease and it's early preventive measures were discussed with postmenopausal women.

RESULTS

Fig 1 depicts Age distribution .64% women were between 45 to 55 years, 36% women were between 55 to 65 years of age Fig2 indicates distribution of the weight of the women enrolled in the study.56% women were under 40 to 50 kg, 26% women were under 50 to 60 kg, 18% were under 60 to 70 kg Fig3 shows height of the women included in the study .78% women were under 140 to 150 cm, 17% women were Under 150 to 160 cm, 5% women were under 160 to 170 cm.



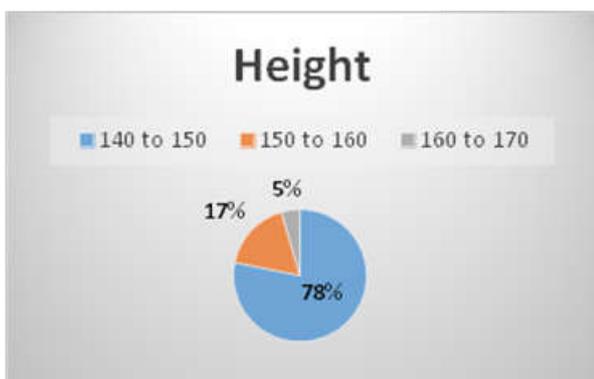
64% women were between 45 to 55 years, 36% women were between 55 to 65 years of age

Table 1. Shows distribution of age



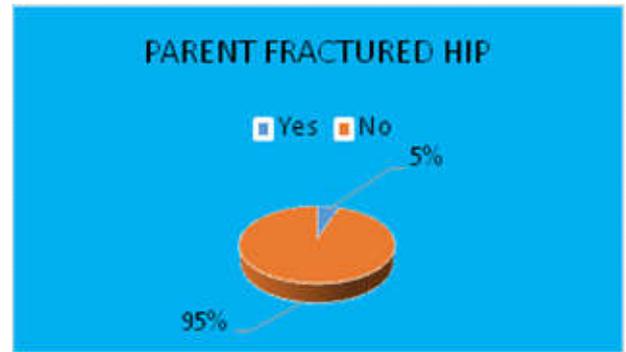
56% women were under 40 to 50 kg, 26% women were under 50 to 60 kg, 18% were under 60 to 70 kg

Table 2. Distribution of weight



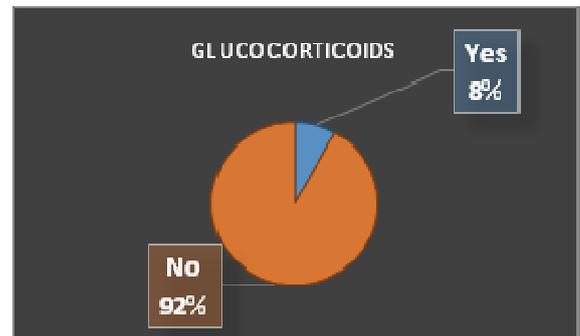
78% women were under 140 to 150 cm, 17% women were Under 150 to 160 cm, 5% women were under 160 to 170 cm

Table 3. Distribution of Height



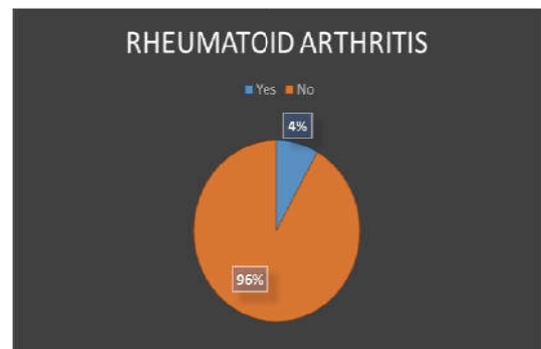
95% did not give history of PARENT FRACTURED HIP which denotes low risk and 5% women gave previous history of PARENT FRACTURED HIP which denotes high risk group

Table 4. History of Parent fracture



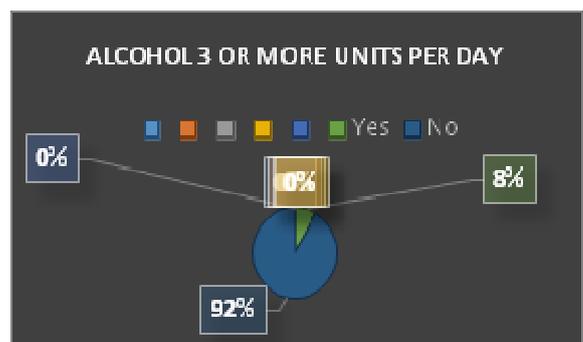
92% did not have history of GLUCOCORTICOIDS which denotes low risk and 8% women had history of GLUCOCORTICOIDS which denotes high risk group

Table 5. History of Glucocorticoids:



96% did not give history of RHEUMATOID ARTHRITIS which denotes low risk and 4% women had history of RHEUMATOID ARTHRITIS which denotes high risk group

Table 6. History of Rheumatoid Arthritis



92% did not have history of ALCOHOL 3 OR MORE UNITS PER DAY which denotes low risk and 8% women have previous history of ALCOHOL 3 OR MORE UNITS PER DAY which denotes high risk group

Table 7. History of Alcohol Consumption

Table1. Major osteoporotic fracture probability & Hip Fracture Probability

Major osteoporotic fracture probability	Percentage	Hip Fracture Probability	Percentage
Low risk	66%	Low risk	79%
Moderate risk	30%	Moderate risk	15%
High risk	4%	High risk	6%

Probability of major osteoporotic fracture and hip fracture. LOW RISK, 66 % , MODERATE RISK 30% and 4% under HIGH RISK for major osteoporotic fracture.. Probability of hip fracture 79% in LOW RISK, 15% MODERATE RISK GROUP and 6% HIGH RISK groups Fig 4 shows how many of them gave history of parental fracture, 5% women gave previous history of PARENT FRACTURED HIP which denotes high risk group. Fig 5 shows history of current smoking and 5% gave history of current smoking which again denotes high risk for fracture. Fig 6 shows history of taking GLUCOCORTICOIDs and 8% women had previous history of GLUCOCORTICOIDs which indicates high risk group.

Fig 7 shows history of having rheumatoid arthritis. 4% had rheumatoid arthritis who falls under high risk group and no one had secondary osteoporosis. Fig 8 shows , 92% did not have history of ALCOHOL 3 OR MORE UNITS PER DAY which denotes low risk and 8% women have previous history of ALCOHOL 3 OR MORE UNITS PER DAY which denotes high risk group. Table 1 shows probability of major osteoporotic fracture and hip fracture. LOW RISK, 66%, MODERATE RISK 30% and 4% under HIGH RISK for major osteoporotic fracture.. Probability of hip fracture 79% in LOW RISK, 15% MODERATE RISK GROUP and 6% HIGH RISK groups FRAX tool is accost effective tool to predict probability of fracture risk in post-menopausal women.

DISCUSSION

In the study we have included postmenopausal women aged 45 to 65 yrs who were not receiving any treatment which is similar to Ahmet Imerci et al study and Ahmet Imerci et al study the risk of major osteoporotic fracture with was determined in 98.7%, and the risk of hip fracture in 88.7% but in this study major osteoporotic fracture High risk in 4% and risk of hip fracture High risk in 6%. As stated by Nanes MS et al after risk assessment of fracture in postmenopausal women in our study increased number of women receiving appropriate therapy.

As stated by Lippuner K with parental history of hip fracture and patients on oral glucocorticoids had as high a probability of any major osteoporotic fracture and in the study we have predicated high probability of fracture risk 5 % in parental fracture and 8 % in women who had glucocorticoid and necessary fracture prevention counseling done. Siris ES has concluded that fracture risk assessment with FRAX in primary care will benefit the patients more. In the study conducted in 110 postmenopausal women were benefitted by simple assessment with simple FRAX tool. Hashimoto K et al in his study says FRAX is easy to use and calculate osteoporotic fracture probability which is similar to our experience

Conclusion

In postmenopausal women fracture risk is now easily assessed with FRAX in the clinical setting, which is useful, simple tool. Easy way to improve postmenopausal women's health

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