

SUMMER TRAINING

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REPORT ON

Prevalence and associated factors of postmenopausal osteoporosis. Detail insight on market opportunity and market strategy for way forward.

Submitted by

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ACRONYMS/ ABBREVIATIONS

AGM-Annual Greeting Meeting

MCA- Ministry of Corporate Affairs

ROC-Registrar of Companies

WHO- World Health Organization

WHI -Women's Health Initiative

ORGANISATION PROFILE

Roucher Bioscience is a private limited company in Bangalore, Karnataka which was incorporated on 7 April 2017. It is classified as non-government company. Its authorised share capital is Rs. 500,000 and its paid-up capital is Rs. 100,000.

This company is registered at ROC Bangalore. Its last AGM was held on 22 December 2018 and latest date of balance sheet available from MCA on 31st March 2018.

Vision & Mission of Company

We at Roucher shall endeavour to introduce the latest technologies and innovative products at affordable price to the end consumers and base our product development on continuous research. We shall also embed ethical practices in our work ethos.

INTRODUCTION

In 1960s when the link between menopause and osteoporosis was first identified, estrogen treatment was standard for preventing bone loss and this treatment continue until the WHI in 2001 published data on 6 years of treatment hormone therapy which reduced fractures.

Osteoporosis is a metabolic bone disease characterised by low bone mass and deterioration of bone tissue which leads to bone fragility and consequent increase in fracture risk.

WHO criteria

T SCORE	DIAGNOSIS
+1 to -1	Normal bones
-1 to -2.5	Osteopenia
-2.5 or lower	Osteoporosis

Osteoporosis causes more than 8.9 million fractures annually worldwide, resulting in an osteoporotic fracture every 3 seconds .Osteoporosis is characterised by decreased bone strength that predisposes to an increased risk of fractures.

PREVALENCE OF OSTEOPOROTIC FRACTURES

The prevalence of osteoporotic fractures rises from 4% in women at age 50 -59 to 52% of women age >80 years. There is a temporal sequence in osteoporotic fractures the first signs being fractures of the lower end of radius starting at 50 years , followed by vertebral fractures at 60-75 years and hip fractures starting in late 70s.

RISK FACTORS OF OSTEOPOROSIS

The risk factors include age , gender(mostly postmenopausal women get affected), genetics, reproductive status , low calcium intake , exercise these all affect bone mass.

OSTEOPOROSIS means porous bones is a disease in which the density and quality of bone are reduced. As the bones become more porous and fragile the risk of fracture increases.

The loss of bone occurs “silently” and progressively. Often there are no symptoms until the first fracture occurs.

Fractures associated with osteoporosis occur most commonly at the wrist, hip and spine.

One in three women and one in five men over the age of 50 years will suffer an osteoporotic fracture. As the hormonal changes takes place at MENOPAUSE are one reason why women are at greater risk than men.

LITERATURE REVIEW

- 1) Prevalence and risk factors of osteoporosis in postmenopausal women with type 2 Diabetes Mellitus, Ivan Raska Jr et al. Cent Eur J Public health march 2017 :- This scientific study was all about the different factors related to lifestyle affects the reduction of bone material density and the objective of this study was to determine whether smoking, drinking coffee and alcohol in menopausal women contribute to the reduction of bone mass and osteoporosis.
- 2) Factors of osteoporosis among postmenopausal women ,a Korean article published by Soong-Nang Jang et al. J Prev Med Public health. Sep 2006 :- It was a cross -sectional survey which was conducted to determine the prevalence of osteoporosis and to evaluate the effects of body composition , health behaviours and reproductive history on bone density in postmenopausal women.
- 3) Overview of research studies on osteoporosis in menopausal women since the last decade, Journal of Mid life health , Wolters Kluwer , Medknow Publications(PubMed ,January 2004- December 2013:- This article was mainly focussing more on diagnosis , prognosis , prevention and treatment which were needed in India. In this article it was concluded that one out of three women between age group 50-60 years in India suffers from osteoporosis, Indian women have an early age of onset of osteoporosis as compared to western counterparts.
- 4) Prevalence and related risk factors of osteoporosis in peri-post menopausal Indian women ,an article published by Niranjana Khandelwal, Ramesh Kumar Sen , J.S thakur September 28,2016 :- This article was all about the prevalence of osteoporosis and in turn increase the awareness, education , prevention and treatment of osteoporosis. In India the precise prevalence of osteoporosis was estimated more than 61 million and 80% of these are female

OBJECTIVE OF THE STUDY

Primary Objective:-To identify the most prescribed and satisfied brands by orthologist for osteoporosis.

Secondary Objective:-

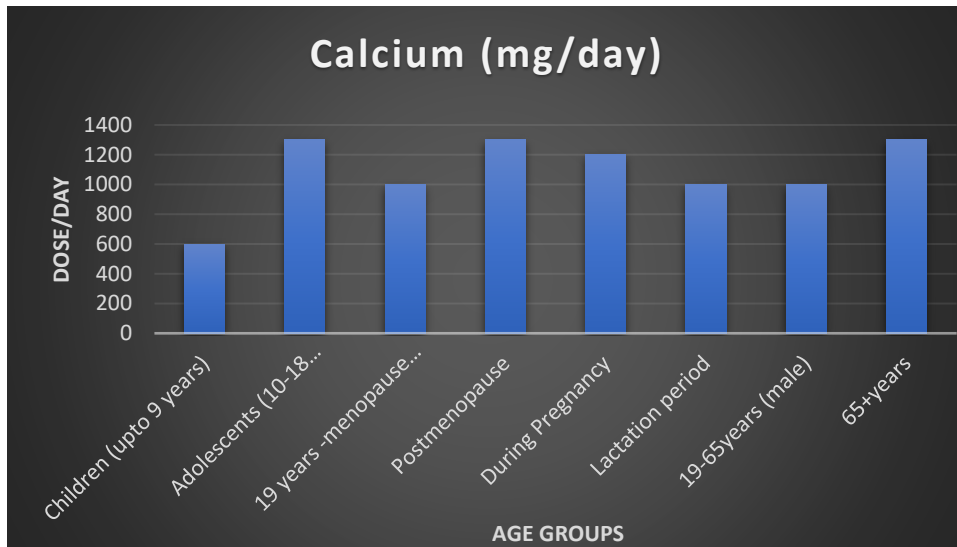
- 1) To study the brand drugs for osteoporosis and its market size.
- 2) To observe and design marketing campaign in osteoporosis

RESEARCH METHODOLOGY

- **Research Type:-** Descriptive
- **Type of data:-** Quantitative
- **Type of data collection:-** Secondary data collection
- **Technique of data collection:-** Simple convenient method.
- **Data evaluation:-** Data was evaluated using MS-Excel and was analysed as well as interpreted.
- **Duration of study :-** 60 days

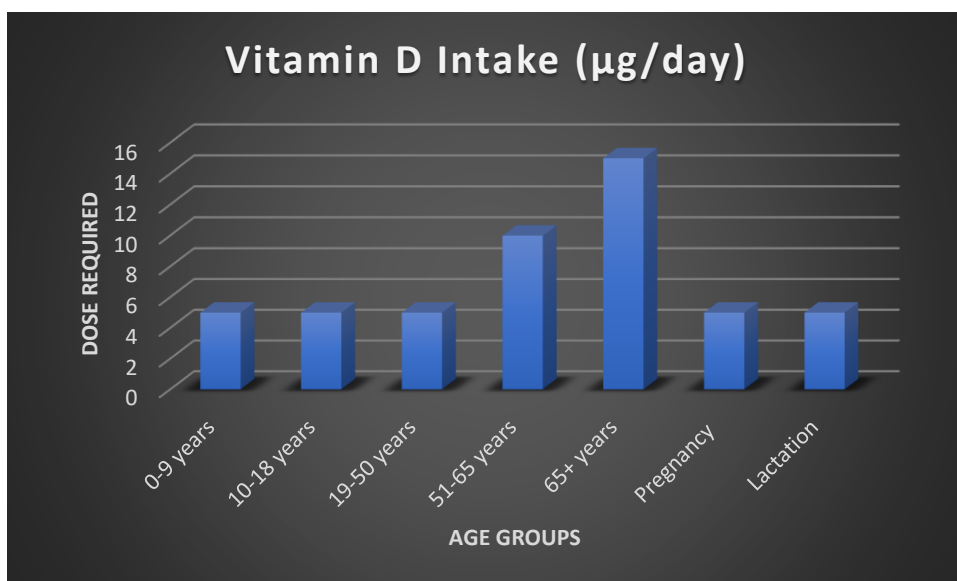
DATA ANALYSIS

1. The graph showing the recommended daily calcium intake by different age groups



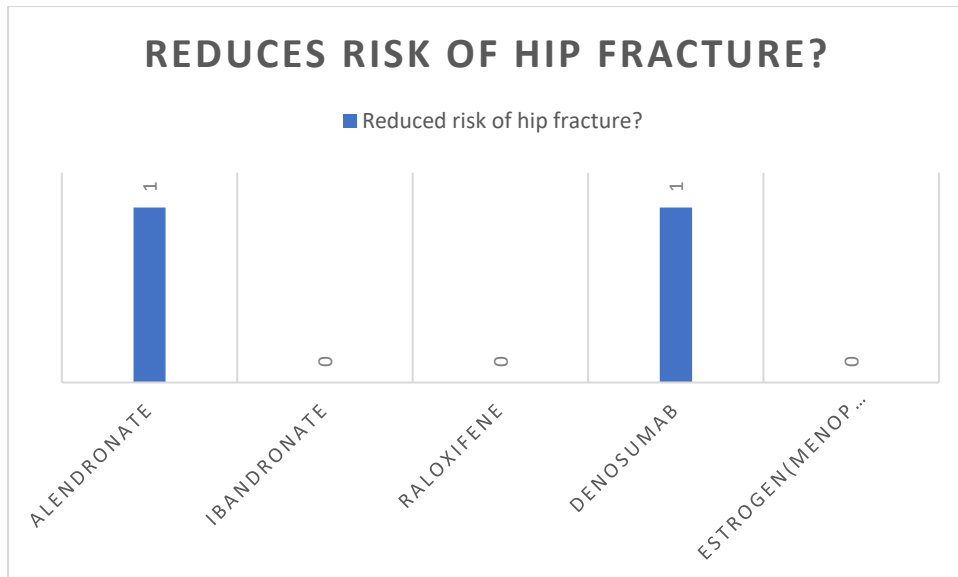
Interpretation:- The daily recommended calcium is required maximum by postmenopausal women, pregnant women, during adolescents and 65+ years.

2. The graph showing the recommended daily intake of Vitamin D by different age groups



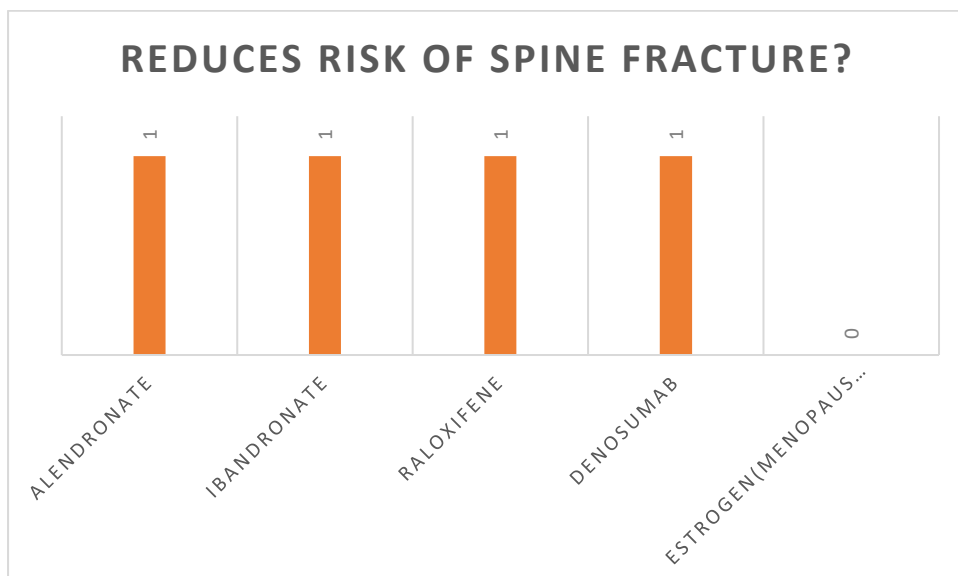
Interpretation:- The daily recommended Vitamin D is mainly required by 51+ years.

3. The drug which reduces the risk of hip fracture?



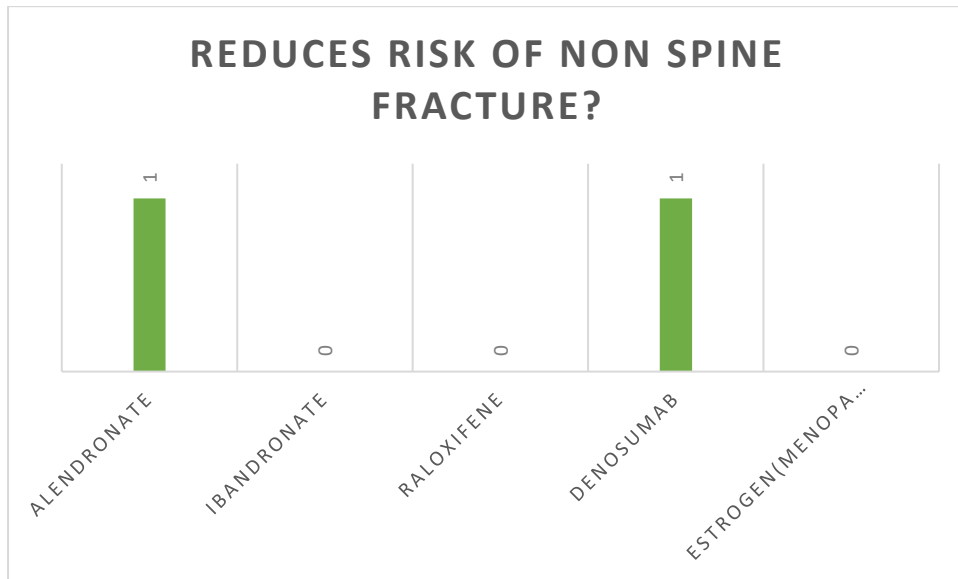
Interpretation:- The most prescribed drug to reduce the risk of hip fracture are Alendronate and Denosumab.

4. The drug which reduces the risk of spine fracture?



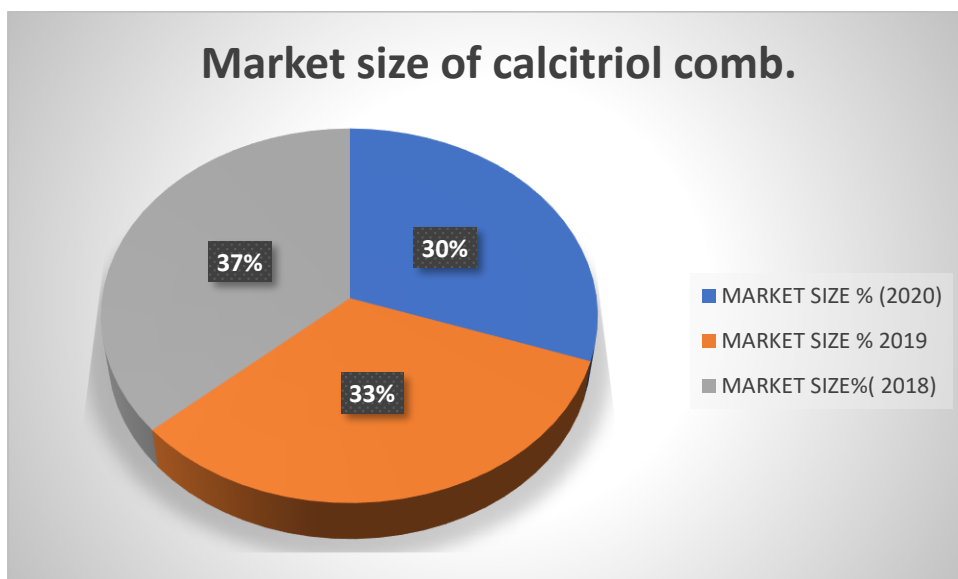
Interpretation:- The most prescribed drug to reduce the risk of spine fracture are Alendronate, Ibandronate, Raloxifene and Denosumab.

5.The drug which reduces the risk of non- spine fracture?



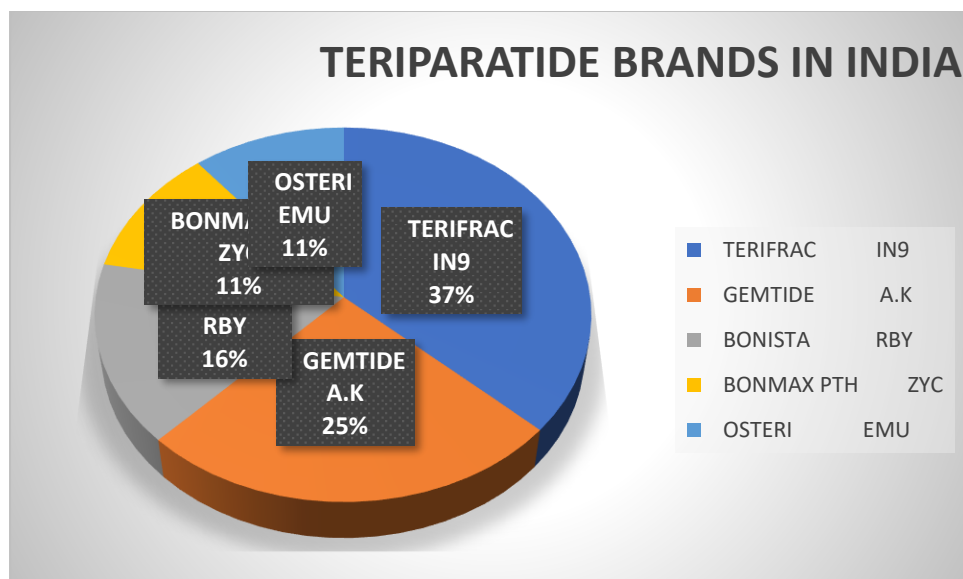
Interpretation:- The most prescribed drug to reduce the risk of non-spine fracture are Alendronate and Denosumab.

6. The following graph shows the market size of Calcitriol:-



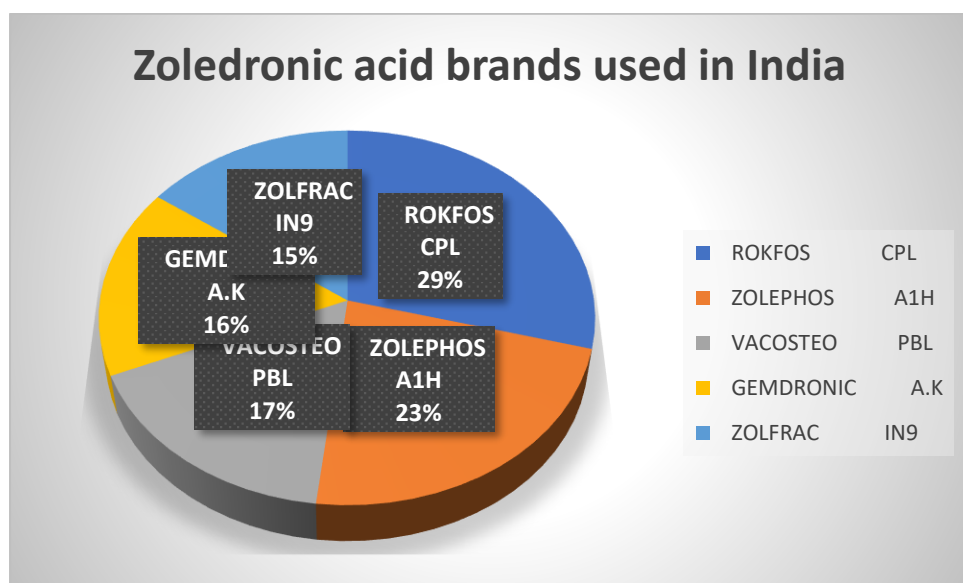
Interpretation:- The above graph shows market size of calcitriol was highest in 2018.

7.The most prescribed brands of Teriparatide in India.



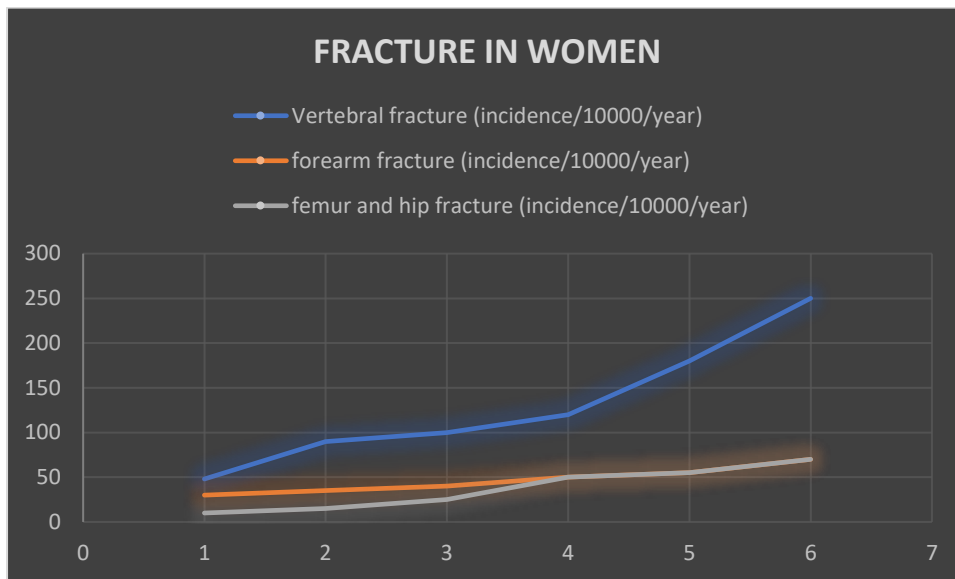
Interpretation:- The most prescribed drug for osteoporosis of Teriparatide brands in India are Terifrac and Gemitide.

8. The following graph shows the most prescribed brands of Zoledronic acid in India.



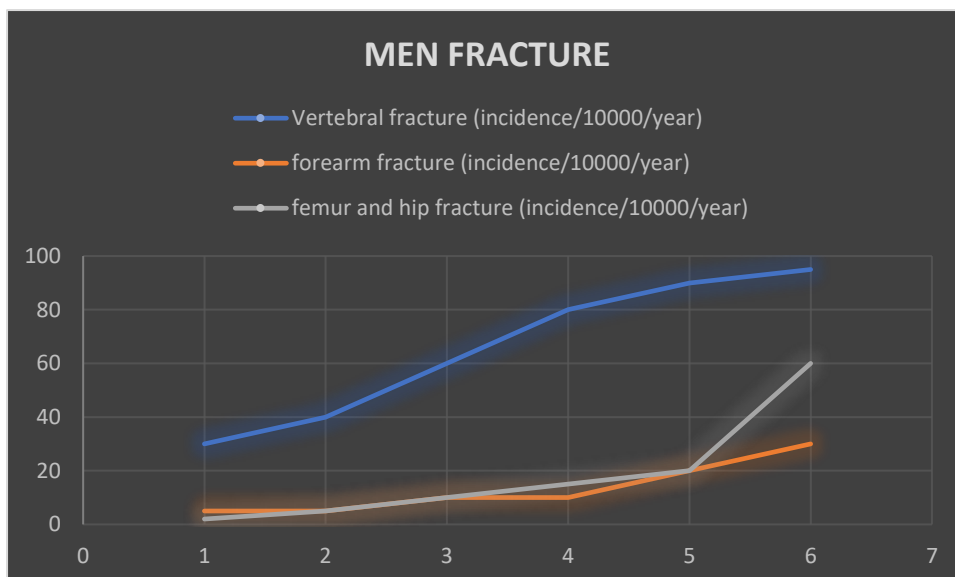
Interpretation:- The most prescribed drug for osteoporosis of Zoledronic acid brands in India are Rokfos and Zolephos.

9.The following graph shows the different types of fractures in Women



Interpretation:-The above graph shows the maximum fracture in women at incidence/10000/year and it was maximum observed in Vertebral fracture which was approx. 250.

10. The following graph shows the different types of fractures in Men.



Interpretation:- The graph represents the maximum fracture in men at incidence/10000/year and it was maximum observed in Vertebral fracture which was approx. 95

Marketing Campaign in Osteoporosis

1) Stop pain ! Choose a healthier tomorrow Campaign.

Be a part of the campaign by showing your personal support to this campaign through this way:-

TAKE CARE OF YOUR BONES

Our bones may be hidden but they should not be neglected. Our skeleton system is the most essential supporting structure that helps us to grow and helps to remain active and independent in old-age.

2) Strong bones lead to strong mind.

Be a part of the campaign by showing your personal support to this campaign through this way:-

Improve your family's bone health

This campaign calls everyone as a caregiver to do all that you can do to improve the bone health of your family and loved ones. Being a parent you can take care of your children and help them to develop strong bone and as a caregiver for elderly parents you can contribute to develop their bone health which will help to reduce the risk of fracture and osteoporosis as we know STRONG BONES LEADS TO STRONG MIND.

3) ME. NO.PAUSE Campaign.

This campaign is basically designed for postmenopausal women. Be a part of the campaign by showing your personal support to this campaign through this way:-

As we all know fracture due to osteoporosis affect 1 in 3 women and 1 in 5 men over the age of 50 .So, don't let osteoporosis break you.

Indian women are prone to low bone density after age of 30 years.

Millions of people suffer from life threatening fractures due to osteoporosis. So use this campaign and don't PAUSE yourself after Menopause.

RECOMMENDATIONS.

- More awareness programmes must be required for patients, doctors, counsellor and health professionalist so that everyone must be aware of this life- threatening disease Osteoporosis.
- Females should be more conscious as in the study it was found that females are more affected as compared to male.
- Hormone therapy (HT) like oestrogens and progesterone in postmenopausal women and testosterone in men with hypogonadism prevents bone loss and reduces the risk of fractures.
- Patients with 10-year fracture risk of less than 10% are recommended to modify their lifestyle , prevent falls and should improve the overall function of the locomotor system specially the neuromuscular system.

CONCLUSION

Through the study it was concluded that the management of osteoporosis drug was average.

This study suggests that Osteoporosis is common and silent disease until it is complicated by fractures that become common .

It was estimated that about 50% women and 20% men over the age of 50 years will have an osteoporosis related fracture in their remaining life.

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- C) <http://www.jmidlifehealth.org>
- D) www.iofbonehealth.org
- E) [ECRONICON orthopaedics research articles.](#)
- F) <https://www.researchgate.net/publication/324973244>