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REVIEWER'S REPORT

Manuscript No.: IJAR-55467

Title: "Retrospective analysis of Clinical Presentation and Pharmacotherapy of Osteoporosis in an Orthopaedic Tertiary Care Hospital".

Recommendation:

Accept as it isYES.....
Accept after minor revision.....
Accept after major revision
Do not accept (Reasons below)

Rating	Excel.	Good	Fair	Poor
Originality		✓		
Techn. Quality		✓		
Clarity		✓		
Significance		✓		

Reviewer Name: PROF. DR DILLIP KUMAR MOHAPATRA

Detailed Reviewer's Report

Manuscript Title

Retrospective Analysis of Clinical Presentation and Pharmacotherapy of Osteoporosis in an Orthopaedic Tertiary Care Hospital

General Comments

A similarly titled older study is published.

There is a 2015 retrospective study titled "A retrospective study of clinical profile and drug prescribing pattern in osteoporosis in a tertiary care hospital" from Karnataka, India, published in the **International Journal of Pharmacy and Pharmaceutical Sciences** in 2015.

That is not the same paper as yours — different location, earlier dates, and different dataset.

The manuscript presents a retrospective observational analysis of the clinical profile and prescribing pattern of drugs used in the management of osteoporosis in a tertiary care orthopaedic hospital in Maharashtra, India. The topic is relevant, particularly in the Indian context where osteoporosis remains under diagnosed and under treated. The study provides useful insight into real-world prescribing practices; however, several methodological and scientific issues need to be addressed before the manuscript can be considered for publication.

Major Comments

Methodological inconsistency

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The study period is described as *August 2023 to April 2024 (8 months)* in the Methods section, whereas the Results section mentions data collected over the *last three years*. This discrepancy must be corrected.

Sample size justification

Although the sample size is stated as 180 patients, the method of calculation is not adequately explained. A brief description of the statistical basis or assumptions used should be included.

Pharmacotherapy focus

The prescribing pattern is dominated by NSAIDs, calcium, vitamins, and antacids. Core anti-osteoporotic agents such as bisphosphonates, SERMs, calcitonin, or denosumab are either underreported or absent. This is a significant limitation and must be critically discussed.

Guideline comparison

The study lacks comparison with standard osteoporosis treatment guidelines (IOF, NOGG, Indian guidelines). Such a comparison is essential to justify the conclusion on rational pharmacotherapy.

Overstated conclusions

Claims regarding improvement in quality of life and reduction in long-term complications are made without outcome data. These statements should be moderated.

Minor Comments

Mean age \pm SD is mentioned in Methods but not reported in Results.

Language and grammar require minor corrections.

Some references are dated; inclusion of recent (last 5 years) Indian or global studies is recommended.

A table summarizing drug classes (Table 2) should be clearly presented and labeled.

STRENGTHS OF THE STUDY

Addresses a **clinically relevant and common public health problem**.

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Focuses on **real-world prescribing patterns** in a tertiary care orthopaedic setting.

Adequate **sample size (n=180)** for a single-center retrospective study.

Clear presentation of **demographic and clinical characteristics**.

Highlights the **burden of musculoskeletal pain** among osteoporotic patients.

Ethical approval was obtained prior to data collection.

WEAKNESSES OF THE STUDY

Retrospective design limits causal interpretation.

Inconsistency in reported study duration.

Absence or minimal use of **disease-modifying osteoporosis therapies**.

Lack of outcome measures such as fracture reduction or BMD improvement.

No statistical comparison or inferential analysis.

Limited critical discussion on irrational or suboptimal prescribing.

Heavy emphasis on symptomatic treatment rather than long-term disease control.

SIGNIFICANCE OF THE STUDY

The study provides **valuable insight into current prescribing trends** for osteoporosis in an Indian tertiary care orthopaedic hospital.

It highlights a **treatment gap** between guideline-recommended therapy and actual clinical practice.

The findings can serve as a **baseline for future interventional or prospective studies** aimed at improving rational osteoporosis management.

The study underscores the need for **physician awareness and guideline adherence** to reduce fracture risk and long-term morbidity.

KEY POINTS / KEY MESSAGES

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Osteoporosis predominantly affects **elderly females** in the studied population.

Back pain is the most common presenting complaint leading to hospital admission.

Prescribing practices focus mainly on **NSAIDs and supplements**, with limited use of anti-osteoporotic drugs.

There is a **clear gap between symptomatic management and disease-modifying therapy**.

Rational, guideline-based pharmacotherapy is essential to improve long-term outcomes.

Drug utilization studies are useful tools for identifying **irrational prescribing patterns**.