

APCO Framework of Clinical Standards of Care: A Major Leap Forward in Streamlining Osteoporosis Care in India

INTRODUCTION

Osteoporosis is a condition characterized by low bone mass and micro-architectural deterioration of the bone tissue, with a consequent increase in bone fragility and susceptibility to fracture. Osteoporosis increases the risk of incident fragility fractures, which, in turn, contribute significantly to morbidity and increased mortality. The 5-year relative survival of patients with osteoporotic hip fracture is comparable with those of thyroid or breast cancer.^[1]

Approximately 30% of all postmenopausal women have osteoporosis in the United States and Europe. At least 40% of these women and 15–30% of men will sustain one or more fragility fractures within their remaining lifetime. In other words, one in three women over age 50 will experience osteoporotic fractures, as will one in five men over the age of 50.^[2,3]

BURDEN OF OSTEOPOROSIS IN INDIA

India is home to more than 1.3 billion people, with approximately 230 million Indians over 50 years. Besides, more than 87 million people are aged 65 years or above accounting for 6.4% of the Indian population. The number is expected to increase to more than 128 million by 2030.^[4] By 2050, the share of the population over the age of 60 years is projected to reach 19%. By the end of the century, the elderly is expected to constitute nearly 34% of the total population in India.^[5]

Data on the prevalence of postmenopausal osteoporosis in India come from studies conducted in small groups spread across the country, and estimates from 2015 have suggested that 20% of the 230 million Indian women over age 50 have osteoporosis.^[6,7] However, as the indigenous population is aging, a marked increase in the incidence of osteoporosis is expected.

GAPS IN OSTEOPOROSIS CARE IN INDIA

Despite the colossal burden of osteoporosis, the screening, diagnosis, and management of osteoporosis in India are far below average. The awareness of osteoporosis is low in India, with surveys indicating that only 10–15% of Indians are aware of the disease.^[8] The availability of dual-energy X-ray absorptiometry (DXA) instruments, a key tool for diagnosing osteoporosis, is about 0.26 per million in India, far below the recommended number of 10.6 per million.^[9] Indians fare poorly compared to other Asian countries such as Japan and Korea, where the availability of DXA is much higher (20.8 and

24.5 per million, respectively).^[10] Moreover, most of the DXA scanners are located in urban areas, and even many large cities in India do not have DXA facilities. This is compounded by the fact that the costs of DXA and osteoporosis treatments are largely not covered by insurance. Despite a plethora of data demonstrating the detrimental impact of osteoporotic fractures on individual health, a real crisis exists, with a significant osteoporosis care gap prevalent all over India. Less than 20% of the patients with osteoporosis are diagnosed and treated in India with treatment compliance rates reported to be only around 64%.^[11]

This is compounded by the lack of consensus among local guidelines for the diagnosis and management of osteoporosis in India. The Indian Menopause Society (IMS) published clinical practice guidelines on postmenopausal osteoporosis in 2013.^[12] This was later updated in 2019–2020.^[13] Similarly, the Indian Society of Bone and Mineral Research (ISBMR) has recently drafted a set of clinical practice guidelines for the diagnosis and treatment of osteoporosis in adult men and women (*under publication*). However, significant disparity among the Indian guidelines and the failure to address current controversies in the field of osteoporosis potentially confound optimum osteoporosis care in India.

APCO FRAMEWORK OF CLINICAL STANDARDS OF CARE: AN INNOVATIVE INITIATIVE TO IMPROVE OSTEOPOROSIS CARE

The Asia-Pacific Consortium on Osteoporosis (APCO) comprises 39 osteoporosis experts from 19 countries and regions spanning the entire Asia-Pacific region (www.apcobonehealth.org). It was launched in May 2019 with the vision of reducing the burden of osteoporosis and its complication in this region. APCO experts hail from across the clinical spectrum of specialties that deal with osteoporosis and are represented by leading authorities from India as well.

APCO believes in fostering the harmonization of osteoporosis care across the Asia-Pacific (AP) region. In line with the guiding principle, APCO has developed a Pan Asia-Pacific Framework of Clinical Standards of Care for the screening, diagnosis, and management of osteoporosis.^[14] The drafting of the framework involved a two-step process: a comparative analysis of the existing osteoporosis guidelines in the Asia-Pacific region followed by a Delphi process for developing the clinical care standards framework.

The prevailing osteoporosis guidelines were scrutinized using a structured template to facilitate standardized identification

of guideline components. The template was based on the '5IQ' model, modifications of which have been used to develop clinical standards for fracture liaison services in Japan, New Zealand, and the United Kingdom. The '5IQ' model stands for Identification, Investigation, Information, Intervention, Integration, and Quality. A four-round Delphi process that employed a series of questionnaires sent to the APCO members was then used to establish a consensus and develop the standards of care.^[14]

The framework consists of 16 clear, concise, relevant, and pragmatic clinical standards that can be adapted to meet individual national requirements. These minimal clinical standards can serve as a benchmark for India (and all other AP countries and regions) to upgrade and revise their existing national osteoporosis guidelines or to develop new guidelines. Such a scientific endeavor will add granularity to and will help to streamline osteoporosis care in India—a dire need of the hour.

Sanjay Kumar Bhadada, Manju Chandran¹, Rimesh Pal, Manoj Chadha², Amrisha Mithal³

Department of Endocrinology, Post Graduate Institute of Medical Education and Research, Chandigarh, India, ¹Department of Endocrinology, Osteoporosis and Bone Metabolism Unit, Singapore General Hospital, 20, College Road, Academia, Singapore, ²Department of Endocrinology, PD Hinduja Hospital and Research Centre, Mumbai, Maharashtra, India, ³Department of Endocrinology and Diabetes, Max Healthcare, Saket, Press Enclave Road, New Delhi, India

Address for correspondences:

Prof. Sanjay Kumar Bhadada,
Department of Endocrinology, Post Graduate Institute of Medical Education and Research, Chandigarh - 160 012, India.
E-mail: bhadadask@rediffmail.com

Prof. Manju Chandran,
Department of Endocrinology, Osteoporosis and Bone Metabolism Unit, Singapore General Hospital, 20, College Road, Academia, Singapore - 169856, Singapore.
E-mail: manju.chandran@singhealth.com.sg

REFERENCES

- Lee YK, Lee YJ, Ha YC, Koo KH. Five-year relative survival of patients with osteoporotic hip fracture. *J Clin Endocrinol Metab* 2014;99:97-100.
- Kanis JA, Johnell O, Oden A, Sernbo I, Redlund-Johnell I, Dawson A, *et al.* Long-term risk of osteoporotic fracture in Malmö. *Osteoporos Int* 2000;11:669-74.
- Melton LJ, Atkinson EJ, O'Connor MK, O'Fallon WM, Riggs BL. Bone density and fracture risk in men. *J Bone Miner Res* 1998;13:1915-23.
- World Population Ageing 2019 Highlights. [Last accessed 2020 Jun 30]. Available from: <https://www.un.org/en/development/desa/population/publications/pdf/ageing/WorldPopulationAgeing2019-Highlights.pdf>.
- Caring for Our Elders: Early Responses India Ageing Report-2017. [Last accessed 2020 Jun 30]. Available from: <https://india.unfpa.org/sites/default/files/pub-pdf/India%20Ageing%20Report%20-%202017%20%28Final%20Version%29.pdf>.
- Malhotra N, Mithal A. Osteoporosis in Indians. *Indian J Med Res* 2008;127:263-8.
- Khadiolkar A, Mandlik R. Epidemiology and treatment of osteoporosis in women: An Indian perspective. *Int J Womens Health* 2015;7:841-50.
- Nallasivan S. Current treatment of osteoporosis. *Indian J Rheumatol* 2019;14:57-60.
- Mithal A, Bansal B, Kyer C, Ebeling P. The Asia-Pacific regional audit-epidemiology, costs, and burden of osteoporosis in India 2013: A report of International osteoporosis foundation. *Indian J Endocrinol Metab* 2014;18:449-54.
- Joshi A, Bhagwat N, Chadha M, Varthakavi P. Osteoporosis treatment in India: Call for action. *Indian J Endocrinol Metab* 2014;18:441-2.
- Jhaveri S, Upashani T, Bhaduria J, Biswas S, Patel K. Current clinical practice scenario of osteoporosis management in India. *J Clin Diagn Res* 2015;9:RC04-8.
- Singh M, Harinarayan CV, Marwah R, Sahay R, Kalra S, Babhulkar S. Clinical practice guidelines on postmenopausal osteoporosis: An executive summary and recommendations. *J Mid-Life Health* 2013;4:107-26.
- Singh M, Harinarayan C, Marwah R, Sahay R, Kalra S, Babhulkar S. Clinical practice guidelines on postmenopausal osteoporosis: *An executive summary and recommendations – Update 2019–2020. *J Mid-Life Health* 2020;11:96-112.
- Chandran M, Mitchell PJ, Amphansap T, Bhadada SK, Chadha M, Chan D-C, *et al.* Development of the Asia-Pacific Consortium on Osteoporosis (APCO) framework: Clinical standards of care for the screening, diagnosis, and management of osteoporosis in the Asia-Pacific region. *Osteoporos Int* 2021. <https://doi.org/10.1007/s00198-020-05742-0>.

Submitted:10-Apr-2021

Published: 21-Jul-2021

Accepted: 28-May-2021

This is an open access journal, and articles are distributed under the terms of the Creative Commons Attribution-NonCommercial-ShareAlike 4.0 License, which allows others to remix, tweak, and build upon the work non-commercially, as long as appropriate credit is given and the new creations are licensed under the identical terms.

Access this article online

Quick Response Code:



Website:
www.ijem.in

DOI:
10.4103/ijem.ijem_156_21

How to cite this article: Bhadada SK, Chandran M, Pal R, Chadha M, Mithal A. APCO framework of clinical standards of care: A major leap forward in streamlining osteoporosis care in India. *Indian J Endocr Metab* 2021;25:12-3.