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Commentary

Arthritis with osteoporosis crippled the elderly during Covid-19 pandemic: A silent killer?

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ABSTRACT

The COVID-19 pandemic impacted the elderly both directly by the affection due to infection and indirectly by the aggravation of the pre-existing medical comorbidities. The management of the chronic diseases took a relative back-seat for an active treatment protocol strategy. The clinicians emphasised on the conservative measures to manage arthritis and osteoporosis. The delayed assessment had a profound negative impact with significant progression of arthritis and osteoporosis amongst the elderly.

The crippling effect of COVID-19 pandemic in the elderly presented furthermore with the advanced stages of arthritis and worsened osteoporosis for the management. The delay in timely offer of surgery for the arthritic joint compromised the functional outcomes. There has been a silent worsening with increased morbidity and mortality.

The literature review and guidelines formulated emphasized on the timely remedial measures either surgical or conservative for the management of arthritis and osteoporosis in an elderly to halt the silent progression, allow a healthy lifestyle with an improved quality of life. The elderly should have priority for an individualized management strategy even during the pandemic to reduce this "silent" morbidity and mortality.

1. Introduction

COVID-19 pandemic presented with unique challenges for the healthcare. The pandemic had profound effect on the physical and mental health in all ages. The elderly had been affected more significantly than the younger generation.[1]

The elderly had been at increased vulnerability for COVID affection with poor outcomes for survival. A higher risk has been associated with comorbid pre-existing medical conditions.[2] The elderly with pre-existing arthritis and osteoporosis have progressed to debilitating painful symptomatology during COVID era.[3]

The sedentary lifestyle and poor exercise tolerability have increased the risk significantly with likely deterioration of the pre-existing medical ailments. The reluctance for consultation due to lockdown restrictions, societal pressures to remain home-bound to avoid COVID exposure, fear of affecting the family members and re-allocation of resources in hospitals have all contributed immensely in the delay and initiation of timely management for arthritis and osteoporosis.[1,4] The multiple compounding factors have affected the likely deterioration of arthritis and osteoporosis in the elderly during the COVID-19 pandemic.

2. Arthritis in the Elderly During COVID-19

The arthritis affection during COVID-19 pandemic has taken its toll in the elderly and young alike.[5] The development of an autoimmune inflammatory arthritis after the COVID-19 affection have been postulated following presentation with polyarticular involvement of joint.[5]

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The osteoarthritis has progressed with worsened physical functions, prolonged poor ambulatory status and reduction of physical activity following the COVID-19 restrictions.

The effect in the rheumatoid disorders has been compounded with an aggravated risk of infection due to poor immune responses.[6] The anti-rheumatic drugs have been frequently used for COVID-19 affection and in the management of the immune system related disorders.[2] The suppression of host inflammatory response was the rationale for the anti-rheumatic medications use in COVID-19 viral infection management. The suppression may protect the lung damage and progression to acute respiratory distress syndrome. The emergency use of medications namely hydroxychloroquine, corticosteroids and interleukin-6 blockers for COVID-19 has been approved worldwide across the globe.[2] The off-label use of drugs such as steroids, antivirals, disease modifying anti-rheumatic drugs, immune-modulators medications and plasma therapy for the management of COVID-19 related illness however, have had a deleterious effect leading to a silent disaster-in-making with an increase in uncommon infections and multi-organ affections with poor outcomes.

The pandemic challenged the treatment approach to surgical management of arthritis. There has been a substantial decline in timely replacement surgeries with an additional delay in the rescheduling of the earlier planned surgeries. The contagious evolving COVID-19 pandemic posed new challenges in the surgical management of joint arthritis.[6] The significant alterations to an individual's immune system, decreased glycaemic diabetic threshold, susceptibility to uncommon inflammation or infection including fungal and variability of inflammatory marker response have compounded the clinician's judgement. The diagnostic dilemma and unconventional treatment protocols have delayed the timely offer of surgery for the arthritic joint with eventually increased substance or medication abuse, delayed functional recovery and poorer outcomes.[1,7]

The recommendations had been to continue the anti-rheumatoid arthritis treatment during the COVID-19 to avert the disease flare ups and avoiding more pronounced affection by the viral infection.[2] An early management protocol can probably reduce the deleterious disease affection in a viral infected or immune compromised elderly. A timely offer for surgical management of arthritis may allow an improved quality of life in the elderly.

3. Osteoporosis in the Elderly During COVID-19

A global survey was conducted by International Osteoporosis Foundation and National Osteoporosis Foundation amongst 209 healthcare workers which included 15% orthopaedic specialist as respondents.[3] They identified the global affection of osteoporosis care. The significant contributors for poor osteoporosis management was delayed physical consultation or a teleconsultation, delayed assessment by scans and delayed procurement of necessary medications especially parental medications for the desired treatment during the pandemic.[3] The survey predicted an increase in the fragility fractures with increased individual morbidity. However, it lacked any prediction on the long-term impact on the osteoporosis care.[3,8]

The osteoporosis has been labelled as a silent killer due to direct and indirect effects of the poor bone health on the morbidity and mortality in an elderly.[4,8] The known risk factors for poor bone health included smoking, alcoholism, sedentary life style, history of fragility fracture, low body mass index, organ transplants, steroid medications and vitamin D insufficiency affected elderly.[4] The pre-existing risk factors in the elderly had an increased negative impact on the bone health.

The probability of sustaining a fragility fracture in the lifetime for a male is one in three and in female, it is one in five chance.[9] With COVID-19 pandemic, the fragility fractures involving the hip, back and lower extremities have presented with additional loss of functional independence in the elderly with an increased morbidity and mortality.[4,10,11]

The measures advocated to combat the osteoporosis during COVID-19 were to rely on fracture risk calculators that do not rely on bone density values, educating the intravenous bisphosphonate users regarding the flu like symptoms, avoiding denosumab interruption and to encourage home-based exercise programmes.[8,12] The rationale for doing regular weight bearing exercises has been to avoid risk of falls and maintain strength, balance and posture in elderly.[8] An early initiation of oral or parental medications, exercises and physical therapy, balanced diet and moderation of risk factors may allow an improved treatment outcome.[11]

4. Discussion

During the pandemic, there were lockdowns limiting the outdoor activities amongst the elderly aggravating the fragility.[8] Fear psychosis of contacting the viral affection negatively impacted their mental well-being. The COVID-19 vaccine diplomacy along with the early vaccine hesitancy also contributed to the fear psychosis amongst both the educated and uneducated masses of the population. However, literature review suggests that osteoporotic medications do not affect the efficacy of Covid-19 vaccines and should be continued with adjustment related to vaccine dosage schedule.[11]

The elderly has been prone to poor outcomes. An increased morbidity with newer systemic affections following a Covid-19 infection may delay the eventual recovery and outcomes from pre-existing arthritis and osteoporosis. Furthermore, the elderly had an aggravated painful response to their pre-existing arthritis and osteoporosis following the imposed restrictions affecting

their quality of life.[3] This impacted the timely interventions for the management of arthritis and osteoporosis in the elderly.

The elderly further presented with limitations in technology usage as opposed to the younger generation. A pronounced age discrimination in usage of digital technology presented during Covid-19.[7] The elderly had a steep learning curve and their adaptability to newer telecommunication challenges depended on multitude of factors including the easy availability of network, ease of adopting the technology and use of easily acquired telecommunication skills.[1,13] The digital divide in the elderly amongst the rural-urban population has been even more pronounced in the developing countries.[1] The digital divide impacted and increased the timely procurement of medications, consultation and treatment facilities for their pre-existing debilities.

The surgical procedures and arthroplasty were markedly delayed in the management of arthritis. The rescheduling of surgical replacement has presented now with multi-fold additional challenges after the COVID affection.[7] The poor chest compliance, lower exercise tolerance, thrombotic episodes, susceptibility to secondary infections, weak cardiac health have significantly increased the risks in the elderly planned for an elective surgery for arthritis management. The pre-COVID elderly population who were considered fit in pre-anaesthesia assessment have now been graded as a higher risk candidate for any proposed arthroplasty procedures.

The literature review and formulated guidelines by national and international associations recommend that the management of arthritis and osteoporosis should be expedited and a timely offer of medications and surgical intervention should be undertaken to improve the functional outcomes and quality of life in an elderly.[4,11,12]

5. Conclusion

The older adults need a prioritised individualized and institutionalized support system during the pandemic. There is an urgent need to identify the crippling effects of arthritis and osteoporosis in an at-risk elderly to ensure timely management for an effective outcome.

6. Authors Contribution and Declaration

Gaurav Govil and Lavindra Tomar contributed to the study conception and design.

Gaurav Govil performed the literature search, data collection, interpretation and prepared the first draft of the manuscript.

Lavindra Tomar and Pawan Dhawan did review analysis and all authors commented on the previous versions of manuscript.

All authors read and approved the submitted manuscript.

7. Conflict of Interest

None.

8. Source of Funding

None.

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