Bringing orthogeriatric care for elderly patients with hip fractures to Asia

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The prevalence of fragility hip fractures amongst the elderly population continues to rise.[1] These injuries are a significant source of morbidity and mortality, with mortality rates of up to 5–10% at 1 month and 12–27% at 1 year from surgery.[2,3] Hip fractures in the elderly also result in significant economic burden and is thus an important public health issue.[1] Whilst there are several pre and post-operative factors that can be optimised to decrease morbidity and mortality, there has been increasing interest in the orthogeriatric care model for elderly patients with hip fractures.[4,5]

The orthogeriatric care model is a multi-disciplinary collaboration between orthopaedic surgeons and geriatricians. This care model encompasses orthopaedic fracture management with geriatrician optimization of pre and post-operative patient physiology. By effective pre-operative medical optimization, patients are able to undergo surgery in a timely fashion. This is important as there is growing data to suggest that surgery for elderly patients with hip fractures should not be delayed past 48 hours, so as to reduce complications and mortality.[6]

It is increasingly clear that close geriatric involvement has its benefits. Van Heghe et al. showed in a systematic review of 37 studies that orthogeriatric care reduced length of stay, in-hospital mortality, one-year mortality, incidence of delirium and cost of treatment of hip fracture patients.[5] In addition, orthogeriatric care models have been shown to reduce acute post-injury complications and intra-hospital mortality, even in traditionally vulnerable populations.[7] Despite these published benefits, it is important to recognise the challenges in implementation of orthogeriatric care models. Certainly, there appears to be an asymmetrical distribution of orthogeriatric care models worldwide, particularly in Asia. Despite the high population numbers living in Asia, only three of the included studies in the meta-analysis by Van Heghe et al. originated from Asia.[5] This stands in comparison to 25 studies that originated from Europe.

Asia has begun to recognise the growing problem of fragility fractures. The formation of the Asia Pacific Fragility Fracture Alliance (APFFA) in 2018 is a reflection of the growing importance of fragility fracture prevention and management in Asia. It is thus timely to read the work of Zhang et al entitled "The effectiveness of a co-management care model on older hip fracture patients in China – A multicentre non-randomised controlled study", published in *The Lancet Regional Health – Western Pacific*. In a multi-centre study in China, Zhang et al. compared the outcomes of 1110 patients in a single hospital which employed Orthogeriatric co-management for hip fracture patients, to 961 patients across five other hospitals who received the usual standard of care with internal physician or geriatric consultation on a non-scheduled, as-required, basis.[8] The authors found that an orthogeriatric model significantly increased the proportion of patients receiving operation within 48 hours from ED arrival (42·9% vs 23·3%, RR = 2·0) and decreased one-year mortality rates (7·3% vs 12·3%, HR = 0·59). In addition, the orthogeriatric model also improved access to osteoporosis treatment (99·9% vs 60·6%) and rehabilitation (99·1% vs 3·9%).[8]

It is important to note that the geriatric care for patients in this study only started in the wards, with emergency medicine physicians taking on the role of medical optimization for surgery prior to ward admission. This likely contributed to the significantly higher percentage of patients receiving surgery within 48 hours. This is particularly interesting for resource-constrained settings. As highlighted by Zhang et al., only a quarter of hospitals are equipped with a geriatric medicine department in China's capital city.[8] Further work should be done to investigate if medical collaborations with emergency department physicians will yield similar benefits to established orthogeriatric care models. Despite the resource limitations, this study highlights that the benefits of orthogeriatric care are readily attainable and universal.

As the adoption of orthogeriatric models increase, it would be beneficial to improve our understanding on some aspects of orthogeriatric care for elderly hip fractures. Firstly, the optimal type of orthogeriatric care model is yet to be established. There is currently

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insufficient evidence to determine if an orthopaedic-led, geriatrician-led or shared orthogeriatric co-management model is superior. Whilst a co-management model has been shown to improve mortality rates,[9] further research should be conducted to clearly determine a best model for optimal resource management and clinical outcomes. Secondly, the effect of orthogeriatric care on post-operative functional outcomes is also not well established. This is of interest as the benefits of an orthogeriatric care model may not be limited to in-hospital morbidity and short-term mortality. Certainly, indicators such as secondary fragility fracture prevention should be monitored, given that access to osteoporotic treatment is enhanced with an orthogeriatric care model.

In summary, this study adds to the growing body of evidence that supports the use of orthogeriatric care models for elderly patients with hip fractures. It further improves our understanding of the effectiveness of such care models and highlights the likely benefits even in a resource-constrained setting. Future studies should consider comparison of different orthogeriatric care models and the use of functional status as an important long-term outcome measure.

Author Contributions

Ho SWL contributed to writing of the manuscript and review of the manuscript. Phua KAS contributed to writing of the manuscript. Tan YJB contributed to writing of the manuscript.

Declaration of interests

All authors have not any conflict of interest to declare.

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