■ ANNOTATION

Looking after patients with hip fracture in low- and middle-income countries

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In the UK, multidisciplinary teamwork for patients with hip fracture has been shown to reduce mortality and improves health-related quality of life for patients, while also reducing hospital bed days and associated healthcare costs. However, despite rapidly increasing numbers of fragility fractures, multidisciplinary shared care is rare in low- and middle-income countries around the world. The HIPCARE trial will test the introduction of multidisciplinary care pathways in five low- and middle-income countries in South and Southeast Asia, with the aim to improve patients' quality of life and reduce healthcare costs.

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Introduction

Fragility fractures of the hip have serious consequences. In the UK, 25% of hip fracture patients die within a year, and survivors have a reduction in their health-related quality of life similar to having a stroke.[1] The outlook is likely to be even worse for people in low- and middle-income countries (LMIC) with fewer resources to support recovery and long-term care.

The number of people with fragility fractures is increasing rapidly in many LMIC. Asia is particularly affected by rapidly ageing populations; a study in nine countries predicted a two-fold increase in the number of hip fractures alone, from 1,124,060 in 2018 to 2,563,488 in 2050.[2] Associated healthcare costs will increase from USD $9.5 to $15 billion.[3] If healthcare systems in LMIC in Asia do not improve outcomes (and thereby reduce the economic costs of caring for patients with hip fracture), their healthcare systems are likely to be overwhelmed.

Multidisciplinary care

Research from the UK shows that introducing multidisciplinary teamwork for patients with hip fracture reduces mortality and improves health-related quality of life for patients while also reducing hospital bed days and associated healthcare costs.[4-8]

However, multidisciplinary shared care is rare in LMIC in Asia. A mixed methods study in India identified key gaps in hip fracture management, with only 30% of patients receiving surgery within 48 hours of hospitalization, and healthcare providers reporting inadequate access to resources (e.g. early physiotherapy), preventing timely treatment.[9] Similarly, a 2016 study from China highlighted long delays to surgery and lack of availability of assessment by geriatricians,[10] although the same hospital subsequently showed that multidisciplinary care intervention could not only significantly reduce time to surgery but also improve other outcomes, and was cost-effective.[11,12]

Current care pathways in LMIC in Asia

Before considering the introduction of multidisciplinary working in low- and middle-income settings, it is necessary to understand current pathways of care for hip fracture patients. In a recent publication, we used the framework of the World Health Organization's Service Availability and Readiness Assessment (SARA) to assess the service availability and readiness for managing patients with hip fracture in LMIC in Asia.[13] Results of this preliminary work showed that in 2020 to 2021, the median time to surgery in, for example, Thailand was three to four days compared with five days or more in the Philippines and Nepal. While specialist orthogeriatricians were available in many centres in Vietnam and India, rehabilitation medicine specialists provide much of the medical care for hip fracture patients in the Philippines and Thailand. Moreover, while nursing and physiotherapy staff were available in nearly all centres, they were not usually empowered to mobilize hip fracture patients with full weightbearing on the first day following surgery.

This exploratory work gave us a basic understanding of the current resources and service

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readiness in each country, leading to the development of the HIPCARE intervention.

Developing the HIPCARE intervention

HIPCARE was developed in collaboration with the World Musculoskeletal Trauma Patient and Public Involvement (PPI) Group so that the patient experience and priorities of patients suffering fragility fractures in LMIC in Asia was central to the trial development. We conducted workshops with investigators, healthcare professionals, and PPI representatives in each of five LMIC: Nepal, India, the Philippines, Thailand, and Vietnam. These workshops also included members/policy leaders from the national Fragility Fracture Network of each country.[14] We provided pre-reading material related to the patient experience of hip fracture and the evidence for multidisciplinary care interventions from around the world. Before the workshops, we asked participants to consider and rank the potential barriers and facilitators for implementing multidisciplinary care in their country. During the workshops, we used a modified nominal group technique (NGT) to gain consensus regarding the key components of a multidisciplinary care intervention, and metrics by which these key components could be measured. The key components were: prompt surgery (requiring cooperation between surgeons, physicians, and anaesthetists); immediate weightbearing mobilization after surgery (requiring input from surgeons, rehabilitation specialists, nurses, and physiotherapists); prompt 'orthogeriatric' assessment to reduce the risk of future falls and fractures (requiring senior physicians co-managing patients with surgeons).

Despite the obvious difficulties of implementation, attendees at the workshops chose challenging metrics to determine the successful delivery of these key components of care: reduced time to surgery from admission to hospital (target: surgery < 36 hours); rapid mobilization post-surgery (target: patient mobilized with unrestricted weightbearing < 24 hours after surgery); and prompt review by a senior physician with an interest in older patients, to include a review of comorbidity, medication, delirium screening, bone health and falls assessment (target: review < 72 hours of admission).

These three quality standards formed the basis of the HIPCARE intervention, to be tested in a cluster randomized trial with embedded process and economic evaluations.

The HIPCARE trial

Eight public hospitals in each of Nepal, India, the Philippines, Thailand, and Vietnam will take part in the trial. Half of the hospitals will be randomly assigned to a control group, continuing with their usual hip fracture care pathways. The other half will be allocated to the HIPCARE intervention. These hospitals will be given additional funds to provide the time of a senior clinician who will act as a 'Champion' for a new multidisciplinary care pathway. The local Principal Investigator and the intervention Champion will establish a Working Group to oversee the implementation of the new pathway; this working group will include healthcare staff from all the relevant disciplines and hospital managers. The HIPCARE working group in each centre will then be trained in the use of the local online database, modelled on the National Hip Fracture Database 'dashboard' used in the UK and other countries with established multidisciplinary models of care. Monthly working group meetings will be established to review data collected to date, and provide local real-time feedback regarding that hospital's performance against these metrics of success. Each month, data will be presented showing the trend in metrics of success over time, providing rapid audit of current care and feedback to the working group leaders during the delivery of the trial.

All patients aged 60 years or older having surgery for a hip fracture will be eligible to take part in the trial. We will collect the core outcome set for hip fracture trials at 120 days after surgery for all participants,[15] the primary outcome measure being Health-related Quality of Life as measured by the EuroQol five-dimension five-level questionnaire.[16-18]

Study progress

Recruitment has begun in the Philippines and will progress to the other four countries during 2024 and 2025. The trial is expected to report in 2028.

Take home message

- Research from the UK shows that introducing multidisciplinary teamwork for patients with hip fracture reduces mortality and improves health-related quality of life for patients, while also reducing hospital bed days and associated healthcare costs.
- However, despite rapidly increasing numbers of fragility fractures, multidisciplinary shared care is rare in low- and middle-income countries (LMIC) around the world.
- The HIPCARE trial will test the introduction of multidisciplinary care pathways in LMIC in Asia, with the aim to improve patients' quality of life and reduce healthcare costs.

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