

## Editorial

# The Era of Geriatric Surgery

Clement LK Chia,<sup>1</sup>*FRCs*, Kok Yang Tan,<sup>1</sup>*FRCs*

According to the United Nations' "World Population Ageing 2017" report, Singapore's population is expected to grow by 5.7 million to 6.6 million between 2017 and 2050.<sup>1</sup> Close to 40% of Singaporeans are expected to be over 60 years old by 2050.<sup>2</sup> This dramatic increase in the elderly population is due to several factors: decrease in birth rate, increase in life expectancy and decrease in mortality.

The elderly surgical patient presents with unique challenges that are attributable to a complex interplay of physiological changes, polypharmacy, psychogeriatric and psychosocial issues. Many of these complexities go beyond the boundary of the surgeon's expertise and a team approach must take precedence. The concept of a transdisciplinary approach for surgical patients is perhaps most applicable in the elderly. Transdisciplinary care is a product of the evolution from multidisciplinary care to a more integrated, collaborative and less compartmentalised approach.<sup>3</sup> Surgical management of the elderly patient should aim to reduce morbidity and mortality and—just as equally important—maintain baseline function postoperatively.

This theme issue is dedicated to the emerging field of Geriatric Surgery. The authors comprise surgeons, geriatricians and anaesthetists who have been chosen for their expertise and reputation in their respective areas of practice. We are deeply grateful for their time and commitment to contribute to this special issue. We hope that readers who are involved in providing perioperative care to the elderly surgical patient will benefit and enhance their knowledge from the diverse range of topics covered.

There are several recurring themes which surface throughout the articles in this issue that highlight their importance in this field. When faced with the elderly surgical patient, it is crucial to identify the frail elderly who is at an increased risk of postoperative morbidity and mortality. Identification of the frail elderly can be achieved via well established criteria like the Clinical Frailty Score or Fried Criteria. These frail and high-risk patients are then optimised for surgery via a multidisciplinary team. Rogerson et al<sup>4</sup> describes the process of comprehensive geriatric assessment (CGA) which consists of holistic assessment and transdisciplinary intervention in the domains

of medical comorbidities, mental health function, social circumstances and environment. CGA can be incorporated into pre-existing perioperative pathways and has been shown to decrease length of stay, morbidity and mortality. However, performing CGA will require significant time, dedicated resources and the expertise of a transdisciplinary team to ensure its success.

Beyond recognising frailty, there is also a push towards personalising care in the elderly. Parks and Cheung<sup>5</sup> believe that the future lies in introducing disease-specific geriatric assessment that is easy to apply in the outpatient clinical setting and that can be used to predict not just cancer-specific survival, but all-cause survival in breast cancer patients so as to guide treatment and intervention from the outset. This should be coupled with an understanding of the unique biology of elderly breast cancer patients to decide which group may benefit from surgery or primary endocrine therapy. This represents a paradigm shift as cancer surgeons move away from traditional staging of disease and towards scrutinising the biology of cancer in order to tailor individualised treatment.

Interestingly, Lohsirawat<sup>6</sup> also attempts to study differences in age groups of the elderly. He stratified the elderly into early elderly (EE; aged 65–75) and late elderly (LE; aged ≥75) and compared their outcomes after colorectal surgery with an enhanced recovery after surgery protocol. He found that even though LE had lower compliance to protocols, they achieved similar outcomes to EE. This will be an interesting area to examine in future research as we see more EE transition to LE in the coming years and this will impact the management strategy that the surgeon adopts from the outset.

In the domain of emergency surgery and trauma, Fernando and Loh<sup>7</sup> and Go et al<sup>8</sup> have similarly highlighted the changing demographics and rise in elderly patients requiring laparotomy and sustaining trauma, respectively. Decision-making in the acute setting can be especially challenging given the high mortality associated with this cohort of patients. The decision to proceed to emergency surgery is complex and requires careful consideration of both patient factors such as frailty and surgical factors such

<sup>1</sup>Department of General Surgery, Khoo Teck Puat Hospital, Singapore

Address for Correspondence: Dr Clement Chia Luck Khng, Department of General Surgery, Khoo Teck Puat Hospital, 90 Yishun Central, Singapore 768828.

Email: chia.clement.lk@ktph.com.sg

as whether the surgery is curative or palliative in intent. In the emergency setting where patients may be delirious or cognitively-impaired, it is often useful to engage the caregiver to understand the patient's wishes and whether any prior advance care plans have been established.

With rapid technological advancement, the use of high-resolution computed tomography (CT) scans in both elective and emergency settings has become increasingly indispensable. This presents a unique opportunity where sarcopenia can be used as an adjunct to frailty assessment for screening of high-risk elderly surgical patients. Psoas muscle mass and density can be easily measured on CT scans and Woo and Redis<sup>9</sup> present robust evidence that highlights sarcopenia is associated with poor short- and long-term outcomes. Currently, only nutritional and exercise interventions have been shown to be promising in modifying this risk factor.

The concept of prehabilitation represents a paradigm shift in which nutritional and exercise interventions are delivered preoperatively. This is elaborated by Kow<sup>10</sup> who describes a trimodal approach of nutritional and exercise intervention and reducing preoperative anxiety. This is delivered in the preoperative setting to enhance frail patients' pre-existing reserves so as to build them to a prefrail state to better withstand surgical stress and ensure that their functions do not drop below their premorbid state postoperatively.

The era of Geriatric Surgery has arrived and we believe that the surgeon equipped with knowledge in this topic will be in good stead to harvest the synergism in a transdisciplinary team to deliver the best possible perioperative care to the

elderly surgical patient. This issue serves as a platform to summarise key concepts and principles of Geriatric Surgery that will hopefully stimulate more research and collaboration to achieve better outcomes and quality of life in the elderly surgical patient.

#### REFERENCES

1. United Nations, Department of Economic and Social Affairs, Population Division (2017). World Population Prospects: The 2017 Revision, Data Booklet. ST/ESA/SER.A/401.
2. United Nations, Department of Economic and Social Affairs, Population Division (2017). World Population Ageing 2017 (ST/ESA/SER.A/408).
3. Chia CL, Mantoo SK, Tan KY. "Start to finish transinstitutional transdisciplinary care": a novel approach improves colorectal surgical results in frail elderly patients. *Colorectal Dis* 2015;18:O43–50.
4. Rogerson A, Partridge JSL, Dhesi JK. Perioperative medicine for older people. *Ann Acad Med Singapore* 2019;48:376–81.
5. Parks RM, Cheung KL. Personalising care in the older woman with primary breast cancer. *Ann Acad Med Singapore* 2019;48:370–5.
6. Lohsiriwat V. Outcome of enhanced recovery after surgery (ERAS) for colorectal surgery in early elderly and late elderly patients. *Ann Acad Med Singapore* 2019;48:347–53.
7. Fernando J, Loh SM. The elderly emergency laparotomy patient – more than just the operation. *Ann Acad Med Singapore* 2019;48:382–5.
8. Go KTS, Cheng JYX, Seah X, Goh MH, Teo LT, Cole E. The changing epidemiology of serious trauma in the elderly population: an increasing concern of a tertiary hospital in Singapore. *Ann Acad Med Singapore* 2019;48:354–62.
9. Woo ECH, Rodis B. Sarcopenia in elderly surgery. *Ann Acad Med Singapore* 2019;48:363–9.
10. Kow AWC. Prehabilitation and its role in geriatric surgery. *Ann Acad Med Singapore* 2019;48:386–92.