Perioperative Medicine

Dr Aruntha Moorthy

Specialist Anaesthetist, CCDHB

Perioperative medicine is an evolving specialty where a multidisciplinary team formulate an integrated, pathway that begins from the time surgery is contemplated through to recovery and return to the community. The overarching principle is that it should be patient centred to address their needs and values. This is an evolution of the traditional pre, intra and postoperative care model which has served many patients well.

However, we are aware that there is a particular group of high risk patients who are not served well by this system which can be fragmented and disjointed. This small group has the highest mortality and morbidity (1,2) and include older patients (3), the frail (4,5) and those with multiple comorbidities. These poorer than anticipated outcomes can result from: Not recognising this subgroup, not planning for their specific needs, and failure to identify and rescue early complications. The developing specialty of Perioperative Medicine attempts to create a bespoke patient-centric model of care as a possible solution to these problems (6) and minimise avoidable harm(9).

What are these poor outcomes?

Traditionally, we monitor: mortality, length of hospital stay and ICU admissions as outcome measures probably because they are easy to trace and are finite end points. These may be useful to hospital accountants and planners however, these end points may be of little meaningful value to a patient consenting for high risk surgery. They are more likely to be interested as to when they can return to their normal life.

Perioperative medicine is trying to address this by looking at different end points, for example quality of recovery score, morbidity scales, days alive at home after surgery (7,8) which patients can relate to. Both sets of outcomes are valuable to different groups for different reasons.

Principles of a Perioperative Pathway

1. Tools to identify high risk surgery.
2. Tools to identify high risk patients (most important).
3. Establishing a team who will know the patient and be involved in their care from pre-assessment to discharge.
4. Getting patients to engage in their care: EPOA, advanced care planning, discussing wishes and needs, (10). Remember to address cultural needs.
5. Medical, anaesthestic and geriatric evaluation. This will include cognitive screening, frailty assessment cardiovascular screening and a risk evaluation e.g. with NZrisk, NSQIP.

   To try and compare this patient to a general population undergoing similar surgery.
6. An MDT with the patient and discussion utilising the principles of the difficult conversation. The team needs to include the surgeon here to outline the options, what life might look like and non-surgical options. Consideration should be given to other specialty providers at this point (11) and areas worthy of optimisation before embarking on the pathway.
7. Once intent is established i.e. goals of care, it needs to be documented, relayed to patient and family again for review, and commenced. This pathway should have the capacity for flexibility if the needs or wishes of the patient change.

The perioperative physician/team will follow patient progress and help to smooth the perioperative journey all the way home and for some time after.

What are we doing in Wellington?

CHRISP (Complex High Risk Surgical Patient) pathway
We managed to get together various components of the ideal pathway, some funding for a 1/10 geriatrician and we commenced a pilot study.

Our Perioperative registrar looked at some of our data from the pilot study over a year and compared them to a matched group and showed a trend of less ICU time, less unplanned ICU admissions and fewer total days in hospital. Interestingly of the CHRISP group initially assessed just under a half did not proceed with initial planned procedure. Some had less invasive surgery and at least one declined surgery, preferring to take the extra home help offered in place of high risk surgery. The pilot study showed some promising results which we hoped would be supportive CHRISP becoming established practice in Wellington Hospital. We are in a queue for permanent funding. With on-going requests from our surgical colleagues and good will we are still continuing to provide this service in a contracted form.

Summary

There is a group of patients whose numbers are increasing and they carry a higher burden of postoperative complications than most. Prolonged morbidity after surgery is associated with a higher risk of premature death for up to two years post-surgery (12). By altering our model of care to anticipate the needs of this group and rescuing them from prolonged harm in the early perioperative period we should improve outcomes for the patient and look after our health resources, and so improve the risk benefit profile.

With regards to the CHRISP pathway we concentrated our efforts on elective high risk patients, in the hope that once we had an established pathway we could quickly put this into action for our acute very high risk patients where the timeframe is hours rather than days.

Of interest

Top med talks
Centre for Perioperative Care

References

1. R M Pearse et al (2012) Mortality after surgery in Europe: a 7 day cohort study: the lancet, Vol 380 , p1059-1065
2. Story: Post-operative complications in Australia and New Zealand (the Reason study). Perioperative Medicine 2013 2;16
3. 3 Watt et all(2018) Identifying Older adults at risk of harm following elective surgery: a systematic review and meta-analysis
4. 4 M Makary et al (2010) Frailty s a Predictor of Surgical Outcomes in Older Patients Journal of American College of Surgeons, Vol 210, issue 6,P901-908, June, 2010
5. 5 Lin et al(2016) Frailty and post-operative outcomes in older surgical patients: a systematic review, BMC Geriatrics,16:157
6. 6 M Gooneratne et al (2016) perioperative medicine, interventions in surgical care: the role of replacing the late night review with daytime leadership, Future Hospital Journal. Feb 3(1)58-61
7. 7 P Myles(2020) More than just morbidity and mortality- quality of recovery and longterm functional recovery after surgery Anaesthesia, 75(suppl.1)143-150

8. 8 S J Davies et al (2013) Measuring outcomes after major abdominal surgery during hospitalization: reliability and validity of the Postoperative Morbidity Survey, Perioperative Medicine 2:1
9. 9 P J Devereaux (2018) Suboptimal Outcome of Myocardial Infarction after non-cardiac surgery, Circulation vol 137, Issue 22, 29 May, p 2340-2343
10. 10 V Fu, (2020) Take Charge after Stroke TCAS study, International Journal of Stroke , April 15 2020
11. 11 A Whiteman et al (2016) The high-risk surgical patient: a role for a multi-disciplinary team approach, BJA, vol 116, (3)311-314
12. 12 S R Moonesinghe et al, Survival after postoperative morbidity: a longitudinal observational cohort study, BJA113(6)977-84