



29 May 2020

COVID-19 patients who undergo surgery are at increased risk of postoperative death – global study

- Patients are at increased risk of dying after surgery if they contract COVID-19
- Non-critical surgery should be postponed during COVID-19 outbreaks
- Investment is urgently needed to increase safety of surgery during COVID-19 outbreaks

Patients undergoing surgery after contracting COVID-19 are at a significantly increased risk of postoperative death, a new global study published in *The Lancet* reveals. Researchers found that amongst COVID-19 positive patients who underwent surgery, mortality rates approach those of the sickest patients admitted to intensive care after becoming infected with the Coronavirus in the community.

Data for 1 128 patients from 235 hospitals was analysed. A total of 24 countries (predominantly in Europe which has seen the majority of COVID-19 cases to date) contributed data to the study, with hospitals in Africa, Asia, and North America also contributing.

Professor Bruce Biccard, Second Chair in the Department of Anaesthesia and Perioperative Medicine at the University of Cape Town (UCT), commented: "Surgery is an important component of public health. Unfortunately, we have lost a tremendous amount of important elective surgery due to cancellations in preparation for the acute and intensive care requirements to treat COVID-19. To ensure a healthy population, we need to ensure these surgeries are done soon. This new study suggests that patients who are infected with COVID-19 around the time of surgery have a high mortality and pneumonia rate. This is going to make the re-introduction of elective surgery difficult, due to the high prevalence of COVID-19 infected patients in the community who are going to need surgery."

However, the study should not be interpreted as a call to halt all surgical procedures, whether elective, urgent or emergency. What it does highlight is the need for particular attention to be focused on these patients in the post-operative period.

Professor Martin Smith, Academic Head of Surgery at the University of the Witwatersrand, stated: "Most of the patients (75%) had an emergency operation. In general these are unavoidable operations and therefore the important lesson is that we need to be more

vigilant with these patients especially after the operation and after the first week after the operation. They are at risk for lung complications. What is not yet clear is if there is anything we can do to change the course of this risk given that the operation is urgently required and that in South Africa most of these operations will be done outside of academic and central hospitals where access to ICU and specialist care is limited.”

The study shows that patients undergoing surgery are a particularly vulnerable group if exposed to COVID-19 in hospital. Due to inflammatory and immunosuppressive responses to surgery and mechanical ventilation, they may be particularly susceptible to subsequent pulmonary complications. In the 30 days following surgery, 51% of patients enrolled in the study developed pneumonia, acute respiratory distress syndrome, or required unexpected ventilation. This may explain the high mortality, as most (81.7%) patients who died had experienced pulmonary complications.

Professor Salome Maswime, Head of Global Surgery at UCT and co-author of the commentary on the study noted: “Globally, many governments and professional bodies are moving from a position of curtailment to reopening of elective surgery. This requires a low prevalence in the community and access to SARS-CoV-2 testing, and ensuring there are sufficient trained staff, hospital and ICU beds, PPE, and all other necessary medical supplies. We are deeply concerned about how COVID-19 might affect access to safe surgery especially in low and middle income countries, as well as for the homeless, migrants and refugees. Surgery is an essential part of modern medicine but access to surgery should not outweigh the risks.”

Overall 30-day mortality in the study was 23.8%. Mortality was disproportionately high across all subgroups, including elective surgery (18.9%), emergency surgery (25.6%), minor surgery such as simple appendectomy or hernia repair (16.3%), and major surgery such as hip surgery or colon cancer surgery (26.9%).

The study identified that mortality rates were higher in men (28.4%) versus women (18.2), and in patients aged 70 years or over (33.7%) versus those aged under 70 years (13.9%). In addition to age and gender, risk factors for postoperative death included having severe pre-existing medical problems and undergoing cancer; major or emergency surgery.

ENDS

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