DOI: 10.1111/aas.13817

EDITORIAL

Morbidity after severe Covid-19; the emperors' new clothes?

It has been known for decades that survivors after intensive care frequently are prone to a number of time-limited or even chronic problems in the months and years after critical illness. Cullen and co-workers 45 years ago published one of the first papers with focus on the ICU survivors.¹ After 12 months only 12% of the ICU patients had fully recovered to their pre-ICU level, which was less than 50% of the 1-year survivors at this time.

In particular, during the 1990 ties more information became available about the variety of problems former ICU patients experienced and the first post-ICU clinic was established in UK in 1993 as a response to deal with this. Also, from Scandinavia, similar information about this burden in former ICU patients have been revealed,² with weight loss, disability and unpleasant memories being frequent 7-8 months after discharge. After a conference in 2012 there was an agreement to collectively call all new physical or mental problems described in patients short time after surviving intensive care the post-intensive care syndrome (PICS).³ A comprehensive review of the PICS can be found in the recently published book: The Post-Intensive Care Syndrome⁴ where all its physical, cognitive and psychological aspects are described in detail.

In this respect, it would have been very surprising if survivors after severe covid-19 disease would escape PICS. On the contrary, it must be expected that they will follow the same path. Physical (dyspnoea) and mental (depression and cognitive impairment) problems are increasingly described after severe post-COVID-19 disease.

In this issue of Acta a research group from Milan in Italy present results from a 3 months follow-up study among critically ill Covid-19 ARDS patients.⁵ Their study cohort consisted of 39 Covid-19 ARDS patients intubated and ventilated for median 9 and hospital stays for median 30 days. At 2 months after hospital discharge only a minority was back to work, and their most common reported health issues were loss of body mass in 38%, malnutrition in 62%, exertional dyspnoea in 51%, pain or discomfort in 41%, alterations of sense of smell or taste in 49%. In this cohort very few patients reported psychological distress or cognitive declines.

What we at present know of long-term outcomes after severe COVID-19 disease is far from complete, since the disease just emerged a little more than one year ago. Two months follow-up is not long, but studies on recovery trajectories after COVID-19 critical illness are important for many reasons.^{6,7} Such knowledge help physicians, patients and families shape more realistic expectations about what recovery paths might entail.⁸

Also, patients with milder COVID-19 disease have reported problems after active disease, and long-term outcomes seems not © 2021 Acta Anaesthesiologica Scandinavica Foundation. to be related to the severity of the disease.⁹ The most frequently reported long-term problem in milder cases are fatigue and breathing problems, and patients still having problems after 3 months should be offered a formal follow-up with chest x-ray.

In patients after severe COVID-19 related problems are reported, and in a recent study from Spain in 91 survivors a decrease in quality of life was reported in more than 2 out of 3 patients,¹⁰ and similar results have been documented from France.¹¹ We will most likely see an increase in such studies from many countries, including our region. Mortality from COVID-19 intensive care treated patients in our part of the world have been found to be rather low¹²⁻¹⁴ so it will be of interest to follow if survivors from these studies will reveal the same patters as previously described.

Obviously severe COVID-19 infections will give health care a "double" hit, first a rather high morbidity and mortality rate while patients are in the ICU and the hospital, then in survivors where many will develop PICS. The first have been met with a remarkable effort to increase hospital and ICU capacity nearly all over the world, the second more silent hit is far from solved. Just a few countries have a nation-wide system to take care of this huge problem with standardized follow-up in dedicated facilities and possibilities for active rehabilitation. Also, in the Nordic area such resources are frequently lacking, and to deliver such care must be given a higher priority. If established now, such facilities can continue to be used after the pandemic in our "ordinary" ICU survivors who will continue to develop similar problems after the COVID-19 pandemic is gone.

> Annette Robertsen¹ Hans Flaatten²

¹Department of Research and Development, Division of Emergency and Critical Care, Oslo University Hospital, Bergen, Norway ²Department of Anaesthesia and Intensive Care, Haukeland University Hospital, Bergen, Norway

Correspondence

Hans Flaatten, Department of Anaesthesia and Intensive Care, Haukeland University Hospital, Bergen, Norway, and Department of Clinical Medicine, University of Bergen, M-5021 Bergen, Norway. Email: hans.flaatten@uib.no

ORCID

Hans Flaatten (D) https://orcid.org/0000-0001-9186-3482

Anaesthesiologic Scandinavica

REFERENCES

- Cullen DJ, Ferrara LC, Briggs BA, et al. Survival, hospitalization charges and follow-up results in critically ill patients. *NEJM*. 1976;294:982-987.
- Kvåle R, Ulvik A, Flaatten H. Follow-up after intensive care: a single center study. *Intensive Care Med.* 2003;29:2149-2156.
- Needham DM, Davidson J, Cohen H, et al. Improving long-term outcomes after discharge from intensive care unit: report from a stakeholders' conference. *Crit Care Med.* 2012;40:502-509.
- Preiser J-C, Herridge MS, Azoulay E, eds. The Post Intensive Care Syndrome. Switzerland AG: Springer Nature; 2019. DOI 978-3-030-24250-3.
- Giacomo M, Leggieri C, Fominskiy E, et al. Two months quality of life of COVID-19 invasively ventilated survivors; an Italian single centre study. *Acta Anaesth Scand*. 2021. accepted: AAS-20-0718.R3.
- Stam HJ, Stucki G, Bickenbach J. Covid-19 and post intensive care syndrome: a call for action. J Rehabil Med. 2020;52(4):jrm00044.
- Yelin D, Wirtheim E, Vetter P, et al. Long-term consequences of COVID-19: research needs. *Lancet Infect Dis*. 2020;20:1115-1117.

- Thurnbull AE, Hurley MS, Oppenhaim IA, Hosey MM, Parker AM. Curb your enthusiasm: definitions, adaptation, and expectations for quality of life in ICU survivorship. Ann Am Thorac Soc. 2020;17:406-411.
- Shah W, Hillman T, Playford ED, Hishmeh L. Managing the long term effects of COVID-19: summary of NICE, SIGN, and RCGP rapid guideline. *BMJ*. 2021;372:n136.
- Taboada M, Moreno E, Cariñena A, et al. Quality of life, functional status, and persistent symptoms after intensive care of COVID-19 patients. Br J Anaesth. 2021;126:e110-e113.
- Valent A, Dudoignon E, Ressaire Q, Dépret F, Plaud B. Three-month quality of life in survivors of ARDS due to COVID-19: a preliminary report from a French academic centre. *Anaesth Crit Care Pain Med*. 2020;39:740-741.
- Haase N, Plovsing R, Christensen S, et al. Characteristics, interventions, and longer term outcomes of COVID-19 ICU patients in Denmark-a nationwide, observational study. Acta Anaesthesiol Scand. 2021;65:68-75.
- 13. Zettersten E, Engerström L, Bell M, et al. Long-term outcome after intensive care for COVID-19: differences between men and women-a nationwide cohort study. *Crit Care*. 2021;25(1):86-89.
- Laake JH, Buanes EA, Småstuen MC, et al. A prospective observational study. Acta Anaesthesiol Scand. 2020;2021. https://doi.org/10.1111/aas.13785