Göteborg, 2022

Aspects of decisions to withhold and withdraw life-sustaining treatment in intensive care

Akademisk avhandling

Som för avläggande av medicine doktorsexamen vid Sahlgrenska akademin, Göteborgs universitet kommer att offentligen försvaras i Hörsal Arvid Carlsson, Academicum, Medicinaregatan 3, Göteborg, fredagen den 9 december 2022, klockan 09.00 av **Alma Nordenskjöld Syrous**

Fakultetsopponent:

Mikael Bodelsson, professor

Anestesi och intensivvård, Institutionen för kliniska vetenskaper, Lunds universitet, Sverige

Avhandlingen baseras på följande delarbeten

I- **Age, SAPS 3 and female sex are associated with decisions to withdraw or withhold intensive care.** Block L, Petzold M, Syrous AN, Lindqvist B, Odenstedt Hergès H, Naredi S. Acta Anaesthesiol Scand. 2019 Oct;63(9):1210-1215.

II- **Swedish intensivists' experiences and attitudes regarding end-of-life decisions.** Nordenskjöld Syrous, A, Ågård, A, Kock Redfors, M,Naredi, S, Block, L. Acta Anaesthesiol Scand. 2020; 64: 656– 662.

III- **Reasons for provider-caused variability in end of life decision-making in intensive care.** Nordenskjöld Syrous A, Malmgren J, Odenstedt Hergès H, Olausson S, Kock-Redfors M, Ågård A, Block L. Acta Anaesthesiol Scand. 2021;65:1102–1108.

IV- **Differences in end-of-life decision making in critically ill patients with and without COVID-19.** Nordenskjöld Syrous A, Gudnadottir G, Oras J, Furguson T, Lilja D, Odenstedt Hergès H, Larsson E, Block L. *Submitted manuscript.*

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Aspects of decisions to withhold and withdraw life-sustaining treatment in intensive care

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Abstract

End-of-life decision-making is required when the patient no longer benefits from available treatment options and there is a need to redirect medical treatment goals from cure to palliative care. End-of-life decisions are multifaceted and complicated processes for intensive care physicians.

The overall aim of the thesis was to evaluate end-of-life decision-making in Swedish intensive care units.

Study I is a registry study from the Swedish Intensive Care Registry (SIR) with the aim of identifying independent variables that increase the odds of receiving a withhold/withdraw treatment decision. A total of 97 095 ICU admissions were analysed, Increasing age, female sex, and a more severe condition at admission (according to Simplified Acute Physiology Score version 3, SAPS 3) were independent factors associated with increased odds of receiving a decision to withhold or withdraw life-sustaining treatment.

Studies II and III are descriptive qualitative studies based on semi-structured interviews with 19 physicians from Swedish intensive care units. Study II explored physicians' experiences with and attitudes about end-of-life decision-making. Intensive care physicians express that end-of-life decisions must be based on sufficient information and an unambiguous medical prognosis, and should preferably be made in consensus with the family, staff, and other physicians. Study III explored variability between individual Swedish intensive care physicians. Physician-related variability involved diverse assessments of patient preferences and was also related to the personality and values of the physician. Study IV is a prospective observational pilot study aimed to explore whether end-of-life decision-making was made differently during the pandemic of Sars-Corona-Virus 2 disease (COVID-19). Altogether, 394 critically ill patients were analysed. Results show that decisions to withhold or withdraw treatment were based on different variables for the COVID-19 cohort compared to the non-COVID-19 cohort.

Swedish intensive care physicians always strive to reach well-grounded end-of-life decisions. Older age, a more severe condition at admission, and female sex are independent factors associated with decisions to withhold and withdraw intensive care treatment. However, variability in decision-making is confirmed in Swedish intensive care units. Interestingly, intensivists generally accept variability in end-of-life decisions. Furthermore, differences in variables predicting a decision to withhold or withdraw treatment were found between a COVID-19 patient cohort and a non-COVID-19 cohort.

Keywords: critical care, end-of-life decision-making, intensive care, life-sustaining treatment, withdraw, withhold.

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