

Half of all ICU patients die within 60 minutes of withdrawal of cardiorespiratory support. Prediction of which patients die before and after 60 minutes would allow changes in service organization to improve patient palliation, family grieving, and allocation of ICU beds. T

A Prospective longitudinal cohort design (n = 765) of consecutive adult patients having withdrawal of cardiorespiratory support, in 28 ICUs in Australia. Primary outcome was death within 60 minutes following withdrawal of cardiorespiratory support. A random split-half method was used to make two independent samples for development and testing of the predictive indices. The secondary outcome was ICU Specialist prediction of death within 60 minutes.

Measurements and Main Results: Death within 60 minutes of withdrawal of cardiorespiratory support occurred in 377 (49.3%). ICU specialist opinion was the best individual predictor, with an unadjusted odds ratio of 15.42 (95% CI, 9.33–25.49) and an adjusted odds ratio of 8.44 (4.30–16.58). A predictive index incorporating the ICU specialist opinion and clinical variables had an area under the curve of 0.89 (0.86–0.92) and 0.84 (0.80–0.88) in the development and test sets, respectively; and a second index using only clinical variables had an area under the curve of 0.86 (0.82–0.89) and 0.78 (0.73–0.83). The ICU specialist prediction of death within 60 minutes was independently associated with five clinical variables: pH, Glasgow Coma Scale, spontaneous respiratory rate, positive end-expiratory pressure, and systolic blood pressure.

Conclusion: ICU specialist opinion is probably the current clinical standard for predicting death within 60 minutes of withdrawal of cardiorespiratory support. This approach is supported by this study, although predictive indices restricted to clinical variables are only marginally inferior. Either approach has a clinically useful level of prediction that would allow ICU service organization to be modified to improve care for patients and families and use ICU beds more efficiently <sup>1)</sup>.

<sup>1)</sup>

Brieva J, Coleman N, Lacey J, Harrigan P, Lewin TJ, Carter GL. Prediction of death in less than 60 minutes following withdrawal of cardiorespiratory support in ICUs. Crit Care Med. 2013 Dec;41(12):2677-87. doi: 10.1097/CCM.0b013e3182987f38. PubMed PMID: 23939359.

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Last update: **2024/06/07 02:51**

