

3. Ylipalosaari P, Ala-Kokko TI, Laurila J, et al: Intensive care unit acquired infection has no impact on long-term survival or quality of life: A prospective cohort study. *Crit Care* 2007; 11:R35
4. Ray WA, Chung CP, Murray KT, et al: Atypical antipsychotic drugs and the risk of sudden cardiac death. *N Engl J Med* 2009; 360: 225–235
5. Zornberg GL, Jick H: Antipsychotic drug use and risk of first-time idiopathic venous thromboembolism: A case-control study. *Lancet* 2000; 356:1219–1223

DOI: 10.1097/CCM.0000000000000642

The authors reply:

We thank Champion et al (1) for their critical appraisal of our article on the long-term outcome of patients with an intoxication (2). Champion et al (1) raised the possibility of misclassification of specific intoxications by the rather broad Acute Physiology and Chronic Health Evaluation (APACHE) IV intoxication subgroups. We agree with Champion et al (1) on the importance of this issue. To illustrate this, Isbister et al (3) showed previously that there is a difference in mortality between certain benzodiazepines, whereas the APACHE IV system contains only seven diagnoses for all types of intoxications and all benzodiazepines are classified within the same group of “sedatives.” Clearly, more research to analyze the influence of specific substances on long-term outcome is warranted. At this moment, we are preparing a more extended follow-up study and will hopefully be able to provide more insight concerning this topic in the near future.

Champion et al (1) were surprised about the strikingly high late mortality rate of patients with intoxications. They indicated that causes of these deaths should be discussed. We agree with this comment. Unfortunately, we are not able to present the causes of death for these patients because this information is lacking in our database. Champion et al (1) raised several hypotheses about the possible causes of death: complications of intensive care treatment, thrombosis, cerebral damage, etc. These are very interesting hypotheses and, indeed, need further exploration. Certainly, it is a limitation of our study that the causes of death are not available yet. Hopefully, our future research will shed more light on this subject.

Champion et al (1) also discussed the relatively low re-admission rate that was found in our study (6.1%) (2). This is indeed remarkable and as we have discussed in our article we feel that the most probable cause is that, during the follow-up period, our ICU database only shows re-admissions to an ICU instead of, e.g., the emergency department or nursing ward.

In short, in our article, we showed that intoxicated ICU patients have a high long-term mortality, which raises questions about the role of specific substances on long-term outcome and circumstances leading to higher risk for long-term mortality. To prevent these deaths, knowledge about the causes is essential and therefore more research on the indicated subjects is warranted.

Dr. de Lange served as a board member of the National Intensive Care Evaluation (NICE) foundation (Benchmarking the quality of Dutch ICUs). Dr. Brinkman is employed

by the NICE foundation (the NICE foundation pays the Department of Medical Informatics in the academic medical center for processing, maintaining, and analyzing the NICE registry). Dr. de Keizer's institution received grant support from, consulted for, and received support for participation in review activities from the NICE foundation (The NICE registry pays the Department of Medical Informatics for maintaining the database of the NICE registry and for processing the datasets and performing analyses). The remaining authors have disclosed that they do not have any potential conflicts of interest.

Raya Brandenburg, BSc, Department of Intensive Care and Emergency Medicine, University Medical Center Utrecht, University of Utrecht, Utrecht, The Netherlands; **Sylvia Brinkman, PhD, Nicolette F. de Keizer, PhD**, Department of Medical Informatics, Academic Medical Centre, University of Amsterdam, Amsterdam, The Netherlands, and National Intensive Care Evaluation (NICE) Foundation, Amsterdam, The Netherlands; **Jan Meulenbelt, MD, PhD**, Department of Intensive Care and Emergency Medicine, University Medical Center Utrecht, University of Utrecht, Utrecht, The Netherlands, Dutch National Poisons Information Center (NPIC), University Medical Center, University of Utrecht, Utrecht, The Netherlands, and Institute for Risk Assessment Sciences (IRAS), University of Utrecht, Utrecht, The Netherlands; **Dylan W. de Lange, MD, PhD**, Department of Intensive Care and Emergency Medicine, University Medical Center Utrecht, University of Utrecht, Utrecht, The Netherlands, National Intensive Care Evaluation (NICE) Foundation, Amsterdam, The Netherlands, and Dutch National Poisons Information Center (NPIC), University Medical Center, University of Utrecht, Utrecht, The Netherlands

REFERENCES

1. Champion S, Spagnoli V, Baud FJ: Why Did Poisoned Patients Eventually Die Long After Their ICU Stay? *Crit Care Med* 2015; 43:e25–e26
2. Brandenburg R, Brinkman S, de Keizer NF, et al: In-hospital mortality and long-term survival of patients with acute intoxication admitted to the ICU. *Crit Care Med* 2014; 42:1471–1479
3. Isbister GK, O'Regan L, Sibbritt D, White IM: Alprazolam is relatively more toxic than other benzodiazepines in overdose. *Br J Clin Pharmacol* 2004; 58:88–95

DOI: 10.1097/CCM.0000000000000702

Balancing Between Benefit and Harm—What Is the Best Solution in Fluid Resuscitation?

To the Editor:

Increasing evidence for the harmful effects of “colloid solutions” in patients with sepsis (1, 2) must have led to a paradigm shift in the choice of solutions used for fluid resuscitation in these patients in recent years, at least in those continents where this type of solutions were used. Meanwhile, the interest shifted from colloid solutions to so-called balanced salt solutions, such as Ringer's lactate or Plasmalyte, as crystalloid alternatives to “normal saline” (3). The reason for this seek for an alternative is that the high chloride content of