cannot be discriminated from other causes such as anesthesia or cooling.[1] Continuous TCD, on the other hand, provides information regarding the status of the cerebrovasculature, including the direction of blood within the cerebral vessels.[2] TCD can also identify the presence, although not necessarily the composition, of HITS, indicative of cerebral emboli.[3] Associated with a greater atheromatous burden of the aorta,[4] the number of HITS and the location of HITS-related brain damage seem to influence the occurrence of neurologic complications.[3]

Employed together, a drop in the TCD signal and EEG slowing suggest an evolving ischemic process, providing the surgical team with the opportunity to correct perfusion abnormalities using mechanical or pharmacological support.[2] Alternatively, neuroprotective strategies, such as systemic hypothermia and pharmacologic suppression of neuronal activity,[5] could be initiated before the development of irreversible injury. Despite the severity of cerebrovascular disease in these two patients, neuromonitoring identified acceptable cerebral flow, and the maintenance of high perfusion pressures likely minimized the risk during surgery. Neuromonitoring-based interventions have previously been demonstrated to reduce postoperative neuropsychologic dysfunction in cardiac surgical patients,[5,6] and may therefore prove to be a useful modality for the increasing proportion of high-risk patients undergoing cardiac surgery.

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A 20-joule electrical cardioversion applied directly to the heart elevates troponin I by at least 1.5 ng·mL^{-1}

To the Editor:

There is increasing evidence that even mild elevations in cardiac troponin I (cTpI) may be associated with a decline in survival after cardiac surgery.[1,2] Between June and July 2002 we investigated the role of intraoperative direct electrical cardioversion in 267 adult patients undergoing cardiac surgery. For the purposes of the analysis we used the peak cardiac marker level for each patient among samples drawn at the intensive care unit on arrival and four and 18 hr after surgery. Data were analyzed by linear regression analysis performed for the minimum cardiac marker level observed in each group of patients (receiving 0, 1, 2, 3, 4, $\geq$ 5 cardioversion) and for the five lowest values observed in each group. After cardiac surgery cTpI was detectable in all patients (peak value of 10 ± 8.8 ng·mL^{-1}). The linear correlation between the number of electrical cardioversions and the peak cTpI level was statistically significant ($r^2 = 0.9$, $P < 0.0001$) when the minimum value of cTpI for each class of cardioverted patients was considered (Figure). This strong association was maintained ($r^2 = 0.8$, $P < 0.0001$) when the five lowest values of cTpI were analyzed.

Our most important result is that myocardial injury following direct electrical cardioversion can be quantified as the elevation by, at least, 1.5 ng·mL^{-1} of peak serum cTpI per shock. The originality of our study stands with the analysis of the minimum values: this statistical method, to the best of our knowledge, has never been applied before in medical practice, could be an alternative to multivariate analysis when predictive factors are not yet identified, their value is $\geq$ 0, their relative role is not comparable and they have different distributions. These conditions are definitely present regarding the release of cardiac biomarkers after cardiac surgery. Our method could be applied to

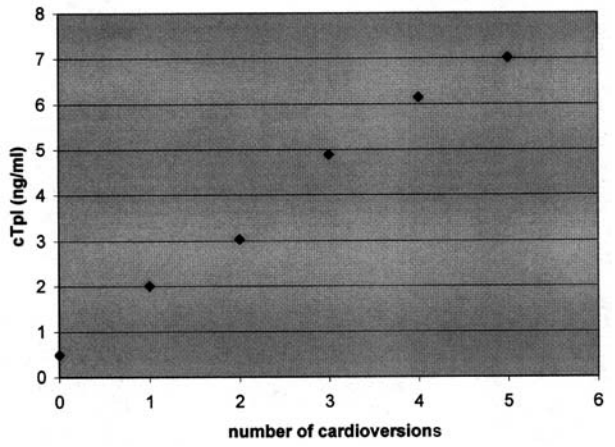

FIGURE Linear correlation between the lowest levels of cTpI in patients receiving 0, 1, 2, 3, 4, ≥ 5 direct electrical cardioversions in 267 consecutive patients undergoing cardiac surgery.

other causes of cardiac biomarker release e.g., (cardiopulmonary bypass or aortic cross clamping).

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Evaluating intubating conditions using the GCRP recommendations

To the Editor:

I read with great interest the article by Yang *et al.*[1] describing differences in postoperative nausea and vomiting between sevoflurane-remifentanil and propofol-fentanyl-rocuronium induction methods. The authors also evaluated intubating conditions according to a system (Table) proposed by experts in neuromuscular pharmacology at a consensus conference held in Denmark in 1994 and published as an article entitled: "Good clinical research practice (GCRP) in pharmacodynamic studies of neuromuscular blocking agents".[2] Although the article has been quoted widely, its recommendations have not always been followed and important variations have been introduced.

TABLE The GCRP recommendations on intubating conditions[2]

	Intubation conditions*		
	Clinically acceptable		*Clinically not acceptable*
Variables	Excellent	Good	Poor
Laryngoscopy	Easy	Fair	Difficult
Vocal cords			
Position	Abducted	Intermediate	Closed
Movement	None	Closing	Closing
Reaction to insertion of tracheal tube and/or cuff inflation			
Movement of the limbs	None	Slight	Vigorous
Coughing	None	Diaphragm	Sustained

GCRP = good clinical research practice. *Intubation conditions: Excellent = all qualities excellent; Good = all qualities either excellent or good; Poor = the presence of a single quality listed under "poor".

Although Yang *et al.*[1] claim that their "…intubating score is based on the GCRP consensus conference…", they increased the number of categories from five to six, with "manual ventilation" added. The other five factors do not match exactly. More important, Yang *et al.*[1] assign points to each result and add them up, instead of considering only three possible final scores (excellent, good and poor), based on the worst result in any category. Thus, there is potential for considerable discrepancy between both scoring systems. For example, the range from 2 to 6 points may correspond to either good or poor scores.

Even with careful evaluation, assessment of intubating conditions remains qualitative and relatively inaccurate. Three possible results (excellent, good and poor), with the addition of a fourth (impossible), are probably enough. There is no need to introduce a system that allows 13 possible results (0–12, or 1–13 as in Figure 1).[1] In addition, the GCRP recommendations are widely accepted, and comparisons can be made more easily between studies. The data provided by Yang *et al.*[1] would be more easily interpretable if they had reported the results as excellent, good or poor.