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**Bispectral index
and suppression ratio
during hypothermia
after cardiac arrest**

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Dear Editor,
I read with interest the paper written
by Dr. Seder et al. [1].

Neurological outcome is challeng-
ing to predict in unconscious post-
cardiac arrest syndrome (PCAS)
patients especially during therapeutic
hypothermia. Dr. Seder's paper
reported that a low bispectral index
(BIS) value and a high suppression
ratio (SR) could predict poor outcome

even in the very early phase (mean
time of 280 min) after the resumption
of spontaneous circulation (ROSC) in
PCAS patients [1]. We have exam-
ined serial data of BIS and SR in
PCAS patients for determining the
neurological outcome under the con-
tinuous administration of muscle
relaxant from soon after ROSC [2]. In
these series, we had a case of very
low BIS (near zero) and high SR
(around 90) soon after ROSC, which
were followed by a gradual increase
in BIS values and a decrease in SRs
within 12 h after admission. There-
after, these changes were so apparent
that BIS values elevated to higher
levels than those of SRs 40 h after
admission. This patient eventually
recovered to cerebral performance
category (CPC) level 2.

Dr. Seder's group obtained inter-
mittent data of BIS and SR after bolus
injection of neuromuscular blockade
and concluded that a BIS value less
than 22 (sensitivity 0.86 and speci-
ficity 0.94) and SR more than 48
(sensitivity 0.84 and specificity 0.93)
could predict poor outcome of CPC
3–5 even in the very early phase after
ROSC. However, such data obviously
included false positive cases.

In this letter, we emphasize a
potential failure to predict neurologi-
cal outcome when using intermittent
sampling of BIS value in unconscious
PCAS patients treated with hypo-
thermia in the very early phase as
Dr. Seder's group indicated.

References

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