Absence and reappearance of N20 response after thiopental withdrawal in postanoxic coma

Nitin K. Sethi, MD: I read with interest the case report by Coppo et al.¹ After coma was induced in the patient by high-dose barbiturate (thiopental) administration to combat refractory nonconvulsive status epilepticus, median nerve somatosensory evoked potential (SSEP) N20 responses elicited from the primary somatosensory cortex were bilaterally absent but responses from brainstem-cervical components were present. Continuous EEG recording at that time showed an isoelectric pattern. N20 responses reappeared after the barbiturate was withdrawn. As expected, at this time EEG showed a diffusely slow delta-theta background with superimposed faster (beta) frequencies, likely due to some degree of persistent sedative drug effect. It is well known from intraoperative monitoring (IOM) literature that evoked potentials of cortical origin (N20 responses in SSEPs and P100 responses in visual evoked potentials) are more susceptible to anesthetics than brainstem potentials such as brainstem auditory evoked potentials and P14, N13, and N9 responses in SSEPs. Sudden IV bolus of anesthetic in the operating room can transiently abolish cortical responses; therefore, this practice is discouraged during IOM. Serial measurement of neuron-specific enolase levels, serial or continuous EEG, and likely serial SSEPs help in accurate prognostication after cardiac arrest, especially in the setting of therapeutic hypothermia and IV sedation.

New York–Presbyterian Hospital, New York.

Disclosures: N. Sethi serves as Associate Editor for *The Eastern Journal of Medicine*.

Authors Respond: Anna Coppo, MD, Simone Beretta, MD, PhD: We read with great interest Dr. Sethi's response to our article¹ describing his experience with SSEPs in the setting of the OR. It is generally accepted that patients who have absent somatosensory cortical responses (N20) after successful cardiopulmonary resuscitation will never regain consciousness. Indeed, this may become a self-fulfilling prophecy if treatment is withdrawn. It is also commonly accepted that SSEPs-N20 are not influenced by sedative drugs in patients in the intensive care unit. Even though it is described that a bolus of anesthetic in the OR can transiently abolish cortical responses assessed by serial SSEP monitoring, we were unable to find clear evidence supporting this phenomenon in the setting of cardiopulmonary resuscitation. We believe that further evidence on the effect of high-dose barbiturates on SSEPs-N20 is necessary in order to increase prognostic accuracy in postanoxic coma.

San Gerardo Hospital, Monza, Italy.

Disclosures: The authors report no disclosures.

1. Coppo A, Beretta S, Migliari M, Ferrarese C, Avalli L. Absence and reappearance of N20 response after thiopental withdrawal in postanoxic coma. *Neurol Clin Pract Epub* 2015 March 19. doi: 10.1212/CPJ.000000000000135.

Neurology® Clinical Practice

Absence and reappearance of N20 response after thiopental withdrawal in postanoxic coma

Nitin K. Sethi, Anna Coppo and Simone Beretta

Neurol Clin Pract 2015;5:274

DOI 10.1212/CPJ.0000000000000169

This information is current as of August 17, 2015

Updated Information & Services

including high resolution figures, can be found at:
<http://cp.neurology.org/content/5/4/274.full.html>

Permissions & Licensing

Information about reproducing this article in parts (figures, tables) or in its entirety can be found online at:
<http://cp.neurology.org/misc/about.xhtml#permissions>

Reprints

Information about ordering reprints can be found online:
<http://cp.neurology.org/misc/addir.xhtml#reprintsus>

Neurol Clin Pract is an official journal of the American Academy of Neurology. Published continuously since 2011, it is now a bimonthly with 6 issues per year. Copyright © 2015 American Academy of Neurology. All rights reserved. Print ISSN: 2163-0402. Online ISSN: 2163-0933.