



A Survey of Neurology-based Intensive Care Unit Specialists

Nöroloji Kökenli Yoğun Bakım Uzmanları Anketi

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Dear editor,

Patients with neurological critical illness are followed up in neurological intensive care units (NICU) for both their primary critical illness and accompanying comorbidities and complications. In the United States, NICUs are managed by specialists called “neurointensivists”. Neurointensivists earn their title after specializing in neurology and neurosurgery (1). In Turkey, the meaning of the concept of neurointensivist has not been clearly defined. Specialists in neurology receive the title of intensive care specialist after subspecialty training.

Our survey study was created for specialists in neurology who have started intensive care subspecialty training and/or completed intensive care subspecialty training. A web-based questionnaire was used as the data collection tool. This survey consisted of questions including the neurology and intensive care education processes of the participants, the type of intensive care unit (ICU) they wanted to work in, and their views on the ICU.

There are 29 neurology specialists in Turkey who have started and/or completed intensive care subspecialty training, and all of these specialists completed the survey. Of the neurologists, 12 reported that they completed the intensive care subspecialty training, 12 continued their intensive care subspecialty training, and 5 left the subspecialty training process. It was determined that 58.6% (17/29) of them received neurology intensive care (NIC) training (1-20 months) during the neurology residency training process. Twelve (70.6%) of 17 participants who received NIC training stated that the NIC training they received contributed

to their selection of an intensive care subspecialty. When rotations other than mandatory rotations during intensive care subspecialty training were evaluated, 23 participants received training in the NICU (1-24 months), 26 participants in the anesthesiology and reanimation ICU (1-24 months), 23 participants in the internal medicine ICU (1-12 months), 25 participants in the chest diseases ICU (1-10 months), and 23 participants in the general surgery ICU (1-18 months). Of the participants 86.2% (25/29) answered the question “Which ICU would you like to work in after the intensive care subspecialty training?” as “NICU”. However, it was observed that none of the 12 neurology-based intensive care specialists could work in the NICU. Of the participants 79.3% stated that neurological and neurosurgical ICUs should be combined, and 75.9% of them stated that they could work in these combined ICUs.

Intensive care began to develop in the middle of the 20th century with the emergence of new technologies for mechanical ventilation. In the following period, ICUs specialized in internal medicine, surgery, trauma, neurology, neurosurgery, burns and coronary heart diseases were established. NICUs were established in universities for academic purposes and became widespread. The Neurocritical Care Association was established in the United States in 2003. The adoption of the NIC subspecialty by the United Council for Neurologic Subspecialties in 2005 constituted an important milestone (2). A similar development process took place in Turkey, and the first NICU was opened in 1976 within the Ege University Faculty of Medicine, Department of Neurology. Subsequently,

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NICUs were opened in many training hospitals in our country. In 2000, the Turkish Neurological Society Neurological Intensive Care Scientific Working Group was established (1).

The Neurocritical Care Association recommends level-based classification of NICUs. Level I NICU is stated as an ICU for patients with complicated catastrophic neurological diseases; level II NICU is stated as an ICU that ensures the stabilization of patients and the safe management of stable neurological intensive care processes; and level III NICU is stated as an ICU that provides the evaluation of patients with neurological emergencies and the transfer of patients to level I or II ICUs after initial management (3). In Turkey, level I ICU generally corresponds to a tertiary level ICU and level III ICU corresponds to a primary level ICU. In Turkey, NICUs are managed by specialists in neurology as a requirement of Neurology Expert Board in Medicine Curriculum Formation and Standard Determination System (TUKMOS) training. Secondary NICUs should continue to be managed by neurologists. However, we are of the opinion that tertiary NICUs, where neurosurgery and neurology patients are followed up, should be managed by neurology-based intensive care specialists. In the United States, neurosurgical and neurological ICUs were combined in some academic centers in the 1980s. In these units, patients with neurological critical diseases, except for postoperative neurosurgery patients, are treated. Neurological critical diseases include traumatic brain injury, neurovascular diseases, status epilepticus, neuromuscular diseases and neuro-oncological diseases (1). In our study, 79% of the participants stated that neurological and neurosurgical ICUs should be combined, and 76% stated that they could work in these combined ICUs. As far as we know, there are no combined neurological and neurosurgical ICUs in Turkey. We think that neurologists who have completed intensive care training, including traumatic brain injury and postoperative care, can manage combined ICUs.

In our study, 86% of 29 neurology specialists who started and/or completed intensive care subspecialty training stated that they

wanted to work in a NICU. Studies have shown that by providing neurocritical care services in NICUs neurointensivists can improve clinical outcomes in patients with neurocritical disease (4,5). However, in our study, it was observed that none of the 12 NIC specialists could work in a NICU. According to the data of the PRINCE study, neurointensivists care for only one-fifth of the patients in NICUs (5). Neurointensivists need to manage NICUs in order to improve patient outcomes, both in the world and in Turkey.

Ethics

Informed Consent: Informed consent forms were obtained from all patients included in our study.

Peer-review: Externally peer-reviewed.

Authorship Contributions

Concept: T.M., H.Ş., Design: T.M., H.Ş., Data Collection or Processing: T.M., Analysis or Interpretation: T.M., H.Ş., Literature Search: T.M., H.Ş., Writing: T.M., H.Ş.

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