Normal Polysomnography in Children and Adolescents

To the Editor:

Ng and colleagues have raised several issues in their comments on our study. Based on the study by Trang et al., they questioned the validity and sensitivity of the thermistor to detect obstructive hypopneas. The use of a nasal cannula to monitor airflow and to detect apneas and hypopneas has become popular in recent years. This technique may be advantageous in many settings, such as during sleep or in critically ill patients. However, there are limitations to the use of a nasal cannula, including potential for unreliability due to mouth breathing or uninterpretable thermistor signals.

In our study, we presented an upper limit value for the OA index that applies to any child who has OAs. We combined the number of obstructive apneas (OAs), obstructive hypopneas, and central apneas (CAs) to arrive at an OA index value that would define normal polysomnography. We found that only three subjects had a total of seven OAs, which is less than the number of OAs and hypopneas typically seen in normal polysomnography.

We think that the finding that only three subjects had a total of seven obstructive apneas (OAs) [one child had five of the seven OAs] precludes the possibility that the normal distribution of OAs over the 70 cases in the study is normal. Hence, calculating the SD for three cases would be meaningless.

The goal of the study was to establish normal values. Therefore, the study aimed to provide an upper limit value for OAs and obstructive hypopneas, such that all resulting values higher than that number would be considered abnormal. Because only 3 of 70 healthy subjects had a total of seven OAs, calculating the normal upper limit by dividing 7 by the total sleep time of all 70 cases combined will result with an OA index value that would define these three healthy children as abnormal.

We used the method described in our study, presented an upper limit value for the OA index that applies to any child who has OAs.

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References

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