in 14 (74%). Early language development was late in 13 (68%), and normal in 6; later deterioration occurred in 9 (47%). EEG spike/spike-and-wave activity was temporal in 12 (63%) and parietal, frontal or central location in 7. CSWS (continuous spike and wave during slow wave sleep) was found in 7 (37%), and 7 had excess epileptiform activity during sleep. At age 9 – 25 years at follow-up, EEG was normal in 10 and showed epileptiform activity in 9. Cognitive ability was average in 7, and variably impaired in 12. Long-term speech and language function is unfavorable in 50% of participants and not more favorable in any one of the three LKS patterns (possible, probable, and definite). In addition to language dysfunction, patients with LKS at follow-up have auditory dysfunction, oral-motor dysfunction, stuttering, and cognitive dysfunction. Persisting epileptiform activity and a family history of seizures are risk factors for a poor prognosis. Further study of antiepileptic treatment is recommended. (Selassie G R-H, Hedstrom A, Viggedal G, Jennische M, Kyllerman M. Speech, language, and cognitive dysfunction in children with focal epileptiform activity: a follow-up study. **Epilepsy Behav** July 2010:18:267-275). (Respond: Dr Gunilla R-H Selassie. E-mail: gunilla.rejno-habte-selassie@vgregion.se).

COMMENT. Three patterns of language development are found in children with sleep-activated epileptiform activity and language disorder (Landau-Kleffner syndrome or epileptic language disorder). Long-term prognosis is unfavorable in 50%, and risk factors for a poor outcome include persistent epileptiform activity and a family history of seizures.

Functional connectivity, language impairment, and localization-related epilepsy. Activation maps and functional connectivity networks were studied by fMRI in 34 adults (mean age 40 years) with cryptogenic localization related epilepsy and language impairment and compared to 20 healthy controls. Activation maps did not differ between patients and controls, but patients with epilepsy had significantly lower functional connectivity in left frontal temporal networks during text reading and on the word-fluency test. Impaired language performance in epilepsy patients is associated with loss of functional connectivity in cognitive language networks. (Vlooswijk MCG et al. **Neurology** August 3, 2010;75:395-402).

SEIZURE DISORDERS

VIDEO-EEG STUDY OF SEIZURE PREVALENCE IN COMATOSE PICU PATIENTS

The prevalence of epileptic seizures (clinical and subclinical) in 100 consecutive comatose children aged 2 months to 17 years in the pediatric ICU was determined using continuous video-EEG (v-EEE) monitoring, in a prospective study at The Royal Children's Hospital, Melbourne, Australia. Half of the monitored patients had primary brain disorders, including traumatic brain injury, hypoxic ischemic encephalopathy, and status epilepticus; half had brain dysfunction secondary to systemic sepsis or organ failure. Epileptic seizures were identified in 7 patients, 6 having a history of epilepsy and a seizure witnessed immediately prior to the v-EEG. Median length of ICU stay was 5

days, and median duration of v-EEG was 20 hours. All seizures were recorded in the first 3 hours of v-EEG. Of 18 monitored patients suspected of having epileptic seizures by ICU staff, only 4 (22%) had confirmed seizures. Short-duration v-EEG is more appropriate than continuous v-EEG in comatose PICU patients with a history of seizures, epilepsy, or clinical events suspected to be seizures. (Shahwan A, Bailey C, Shekerdemian L, Harvey AS. The prevalence of seizures in comatose children in the pediatric intensive care unit: a prospective video-EEG study. **Epilepsia** July 2010;51:1198-1204). (Respond: Dr Amre Shawan, Neurology Department, The Children's University Hospital, Temple St, Dublin 1, Ireland. E-mail: amre_s@yahoo.com).

COMMENT. The authors conclude that epileptic seizures are relatively uncommon (7%) in comatose PICU patients, and v-EEG should be short in duration and limited to those with clinical seizures prior to admission, or in patients suspected of having clinical seizures by medical or nursing staff. Further studies are recommended. These findings and recommendations for PICU patients are in contrast to neonatal ICU comatose patients with a higher prevalence of epileptic seizures and a longer NICU stay. Continuous EEG with simultaneous video recording is recommended for detection of seizures in comatose NICU patients. In studies of neonates involving HIE, seizures occur in 22-59% (McBride MC et al. **Neurology** 2000;55:506-513); 70-88.5% of seizures are NCS.

EFFECT OF WHOLE-BODY COOLING ON PHENOBARBITAL CONTROL OF SEIZURES IN NEONATES WITH HIE

Forty-two infants with hypoxic-ischemic encephalopathy (HIE) admitted to University of Alabama, Birmingham, from 1999 to 2007, received whole-body hypothermia and of these, 20 also received a single dose (40 mg/kg) of prophylactic phenobarbital. Infants in the phenobarbital group achieved a body temperature of 33.5C at 3 +/- 2 hrs after birth, and controls with cooling only achieved the same degree of hypothermia but at 5 +/- 2 hours (P=0.03). Follow-up data at 18 to 49 months found 23% infants in the phenobarbital group had moderate to severe neurodevelopmental impairment or death compared with 45% of controls (P=0.3). During NICU admission, only 15% of infants treated with cooling and prophylactic phenobarbital had clinical seizures compared with 82% of control infants (P<0.0001). Patients who received phenobarbital at birth were less likely than controls to be discharged on phenobarbital (P=0.01). Higher birth weight, higher 5-min Apgar score, and prophylactic phenobarbital were associated with significantly improved outcome. (Meyn DF Jr, Ness J, Ambalavanan N, Carlo WA. Prophylactic phenobarbital and whole-body cooling for neonatal hypoxic-ischemic encephalopathy. **J Pediatr** July 2010;157:334-336). (Reprints: Dr Donald F Meyn Jr, 9000 Airline Hwy Suite 340, Baton Rouge, LA 70815. E-mail: don.meyn@infamedics.com).

COMMENT. Adverse cognitive effects of phenobarbital must be considered in weighing possible neuroprotective benefits of prophylactic phenobarbital in HIE.