incomplete. Use of two or more AEDs (polytherapy) increases the teratogenic risk. Pregnancies in women with epilepsy should be planned. During the year prior to conception, an attempt should be made to minimize the teratogenic potential of the AEDs by changing to a newer AED, to monotherapy from polytherapy, or tapering off the AEDs, if there are reasons to believe that seizures will not recur (see later). The lowest effective dose of the AEDs should be used, but this must be balanced with the risk of a breakthrough seizure. Folic acid deficiency is a well-established factor in neural tube closure defects in the general population. There is little evidence that additional folic acid in a well-nourished woman with epilepsy decreases the AED effects on neural tube closure. However, it is common practice to place women with epilepsy of childbearing age on supplemental folic acid (1 mg) as prophylaxis against a neural tube closure defect. Once pregnancy is planned or recognized, the dose of folic acid is commonly increased to 4 mg per day.

Management during and after Pregnancy

Women with epilepsy have a 1.5- to 3-fold increased rate of complications of pregnancy, including bleeding, toxemia, abruptio placentae, and premature labor. They should be managed as high risk pregnancies. High-quality (focused or type 2) ultrasound, maternal serum alpha-fetoprotein level (elevated in neural tube closure defects), and amniocentesis for chromosomal analysis are used to identify fetal malformations.

During pregnancy AED concentrations decrease due to increased hepatic and renal clearance and increased plasma volume. The free fraction of highly protein-bound AEDs (e.g., phenytoin and valproate) typically increases due to decreased albumin concentration and increased competition for binding sites by sex steroids. Thus, it is essential to monitor drug levels (free levels for highly protein-bound AEDs) prior to conception and at regular intervals throughout pregnancy. Hepatic induction of glucuronidation can dramatically reduce lamotrigine levels, sometimes requiring doubling or tripling of the lamotrigine dose to maintain prepregnancy levels. Lamotrigine levels should be measured at least every month throughout pregnancy. Similarly, oxcarbazepine levels fall by about one third beginning in the first trimester and, thus, the dose should be increased and the level checked at least each trimester.

Emesis, a common problem during early pregnancy, can result in missed and partial doses of AEDs. The expectant mother should have specific instructions to retake a full or partial dose of her AEDs if vomiting occurs after medications are taken. After the child is born, the dose of AEDs should be tapered to the pre-pregnancy amount within days to weeks. The AED levels can be checked 1 to 2 weeks after completing the taper to confirm they are at the patient's baseline. In general, breast-feeding is not contraindicated in women taking antiepileptic drugs.

During the postpartum period the mother with epilepsy may be at increased risk of seizures, especially if her seizures are activated by lack of sleep. To decrease this risk, a support person should perform at least one of the nighttime feedings. Patients whose seizure semiology would put the infant at risk (e.g., dropping or excessively clutching the baby) require childcare modification or supervision.

PSYCHOSOCIAL CONCERNS

Ongoing epileptic seizures often have major emotional consequences for the patient and family. Comorbid depression is present in up to 50% of patients with refractory epilepsy and 20% of patients with controlled epilepsy. Anxiety disorders are also common. Both are often unrecognized and untreated. In people with epilepsy, quality of life impairment is better correlated with depression than seizure frequency. The unpredictable nature of seizures and the necessary activity restrictions cause dependence, decreased self-worth, embarrassment, underemployment, and helplessness. Reduced libido and hyposexuality are common in patients with epilepsy and are often unrecognized.

Family dynamics are often disrupted by the presence of epilepsy. Both families and patients often fear seizures (seizure phobia). Family members may think their loved one is dying when they have a convulsion, especially for the first time. Patients with epilepsy are helped most by complete seizure control, but reassurance and optimistic social guidance can aid immeasurably. Once seizure control is achieved, affected persons should be encouraged to live a near normal life, using common sense as a guide. Although activity restrictions may eventually be lifted, patients with past epilepsy (with the exception of CAE and benign epilepsy with centro-temporal spikes, which completely remit) should be advised to avoid head contact sports, high alpine climbing, scuba diving, and professions requiring work at heights, large amounts of driving, or weapon use.

All states grant automobile driver's licenses to patients with epilepsy provided that no seizures have occurred for specified periods (typically six months to one year). Life and health insurance policies can generally be obtained. Epilepsy foundations and local social service organizations can assist patients with case coordination, including social and vocational considerations.

PROGNOSIS

Sixty to 70% of people with epilepsy achieve a 5-year remission of seizures within 10 years of diagnosis. About half of these patients are eventually seizure-free without AEDs. Factors favoring remission include an idiopathic form of epilepsy, a normal neurological examination, and onset in early to middle childhood (excluding neonatal seizures). Approximately thirty percent of patients continue to have seizures and never achieve a permanent remission with medications. In the United States, the prevalence of intractable epilepsy is 1 to 2 per 1000 population. Such patients should be evaluated at an epilepsy center. Injuries due to seizures are common. Advising patients not to cook, or to use back burners or microwave ovens, can prevent some serious burns. A helmet is advisable for those with drop seizures.

Sudden unexplained death in epilepsy (SUDEP) occurs in 1 per 1000 patients per year taking all forms of epilepsy together. In the most refractory epilepsies, the SUDEP rate is greater than 1 per 200 patients per year. SUDEP may be due to excessive autonomic nervous system sympathetic tone during an unwitnessed seizure with resultant cardiac arrhythmia or pulmonary edema. Suffocation can occur after an unwitnessed convulsion if the patient ends up face down in a pillow. Accidental deaths related to seizures (e.g., motor vehicle collisions) further increase the death rate.