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Fetal Alcohol Syndrome

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Fetal Alcohol Syndrome (FAS) is a set of physical and mental abnormalities inflicted upon an infant because of a mother's consumption of alcohol (ethanol) during pregnancy. Only a few studies with large groups of pregnant women have been made, but recent estimates suggest that two of every 1,000 live children born suffer from FAS. According to fetal alcohol researchers, one of every three alcoholic women who become pregnant will miscarry or produce a child who either dies soon after birth or is born with permanent defects.

Alcohol Use During Pregnancy

Both the use and abuse of alcohol are increasing among women today. A larger portion of the female population is drinking alcohol than 20 years ago. Those women who drink are consuming larger quantities of alcohol than in earlier years, and the female death rate because of alcohol related disease has risen.

History of Warnings To Pregnant Mothers

For centuries, observations were recorded that heavy drinking during pregnancy could have adverse health effects on the

offspring. Both Carthage and Sparta had laws prohibiting the use of alcohol by newly married couples in order that defective children might not be conceived. Aristotle (322 B.C.) remarked, "Drunken women bring forth children likened unto themselves."

In 1849, a panel of Great Britain's distinguished physicians awarded a prize to William B. Carpendor, M.D., of London, for an essay in which he described the incidence of mental disability in the offspring of alcohol abusers. Despite these historical warnings, even today little publicity reaches pregnant women of the dangers of alcohol consumption during pregnancy.

Characteristics of FAS

A wide range of structural, growth and functional abnormalities can be found in the children of alcoholic women. The principal and associated features of FAS are grouped into four categories:

Central Nervous System (CNS) — The most common CNS dysfunctions (seen in more than 80 percent of the patients) are mental retardation, microcephaly (abnormal smallness of the head) and irritability in infancy. Less frequent but still noted in greater than 50 percent of the patients are poor coordination, hypotonia (reduced muscle tone), and hyperactivity in childhood.

Growth Deficiency — Prenatal and postnatal reduction in body length and weight below the third percentile occurs in more than 80 percent of the cases.

Characteristic Cluster of Facial Abnormalities — Most frequent and characteristic are short palpebral fissures (short, longitudinal openings between the eye-

lids), a short, upturned nose with hypoplastic philtrum (underdevelopment of the ridge between the base of the nose and upper lip), and sunken nasal bridge, epicanthal folds (folds on inner aspect of the eyelids), a thin upper lip, hypoplastic maxilla (underdevelopment of the midface) and growth retardation of the jaw. These facial anomalies are individually subtle, but when present together, they characterize a face that is sufficiently distinctive to be recognized as FAS by trained clinicians.

Other Major and Minor Malformations — Among the FAS patient population, there is an increase in malformations of various organ systems including cardiac, urogenital and skeletal. For example, skeletal defects include limited joint movements, particularly of fingers and elbows.

Full-blown cases of FAS are rare. The chances of birth defects occurring because of maternal alcohol consumption range along a continuum, with greater consumption generally involving a greater risk to the fetus.

Safe Consumption

What is a safe level for alcohol consumption in a pregnant woman? Certainly the best answer would be for a pregnant woman to avoid alcohol from the time of conception until birth of her child.

The risk for fetal abnormalities is probably low if less than one drink is consumed per day (1 ounce of liquor, slightly more than 12 ounces of beer or about 8 ounces of wine). If 1 or 2 ounces of liquor or its equivalent are consumed per day, the risk for abnormalities approaches 10 percent. More than this amount consumed daily is estimated to result in a 19 percent risk of abnormality.

Moderate drinkers, who average two cocktails a day, produce babies weighing 180 grams (6.3 ounces) less than those of nondrinkers according to a University of Washington study. A mother's moderate drinking, by this definition, has a slightly greater impact on her baby's weight at birth than does heavy smoking.

Timing of the alcohol consumption appears to be important. **Since it is often difficult to identify time of conception, women who are attempting to conceive should moderate their drinking of alcohol.** Binge drinking at a particularly susceptible point of fetal development is also dangerous. A woman cannot "save up" alcoholic drinks all week and then overconsume during one evening. When heavy drinking occurs during the first month of pregnancy, the risk for malformation is greater than if it occurs after the first trimester (first 3 months).

When alcohol is consumed in excess of the pregnant mother's ability to detoxify it, alcohol enters the fetal blood supply and bathes the developing brain cells. The danger is that alcohol has the capacity to absorb water. Alcohol causes some of the fluid from the developing brain cells to be withdrawn. The developing brain cells are then killed or remain functionless.

Recommendations

If possible, do not drink any alcoholic beverages during pregnancy. If you must drink, consume only one drink per day. Drink it slowly and eat foods such as meat, cheese and nuts (foods containing some fat) with the alcoholic beverage.

Fathers should be cooperative and support alcohol restriction. Limiting social occasions that center around alcohol consumption is a good technique. Substituting flavorful drinks instead of cocktails can also help.

Fetal Alcohol Syndrome is preventable. When a developing child is bathed in alcohol, the effects can last a lifetime.

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