

## WHAT DO MOTHERS OF FAS CHILDREN HAVE IN COMMON?

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**A CRITICAL REVIEW of “Characteristics of mothers who have children with fetal alcohol syndrome or some characteristics of fetal alcohol syndrome.”** *Kvigne VL, Leonardson GR, Borzelleca J, Brock E, Neff-Smith M, and Welty TK. (2003), J Am Board Fam Pract.16(4):296-303.*<sup>1</sup>

**F**etal Alcohol Syndrome (FAS) has been a concern of health care workers for many years. Despite active public advertising initiatives women still consume alcohol during pregnancy.<sup>2,3</sup> As health care workers one of the roles we play is intervener. The art of medicine remains identifying the correct point at which we choose to intervene.

Interventions for the treatment of FAS are well studied and range from simple abstinence to larger programs. In fact pregnancy is a time when women are often willing to make changes in behavior.<sup>4</sup> There is a growing body of evidence to show that FAS can be prevented if interventions can be put in place.<sup>5</sup> Studies have shown that physicians and other health care workers often have problems identifying mothers at risk of having a FAS child.<sup>6,7</sup>

Screening tools exist<sup>8</sup> but can be difficult to use given the highly differing prevalence of maternal alcohol consumption and social attitudes. The prevalence is estimated to be about 1 to 2 births per thousand in North America<sup>9</sup> with higher rates in aboriginal populations<sup>10,11</sup> and even higher rates in urban aboriginals<sup>12</sup> and in South Africa.<sup>13</sup>

The study by Kvigne *et al*<sup>1</sup> is important because it identifies many characteristics of women who are at risk for having a child with FAS. This will allow health care workers to better identify patients requiring intervention to prevent FAS.

The paper reports on a retrospective case control study looking at two groups of aboriginal patients. Group one consisted of 43 women whose offspring had all five of: (i) prenatal alcohol consumption, (ii) FAS diagnosis or suspected diagnosis, (iii) facial characteristics, (iv) growth deficiency, and (v) central nervous system impairment. Group two was made of 35 cases of fetal alcohol effects (FAE) and included women whose offspring met one to four of the above criteria. The authors collected data on numerous characteristics of the mothers and compared both groups to each other and to control patients.

They found that women who were parents of FAS/FAE children had similar characteristics. The following characteristics were found to be statistically significant when compared to controls: older, higher parity, fewer prenatal visits, mental health problems, more injuries (total and alcohol related), more alcohol related problems, binge drinking, and more frequent drinking. These findings were similar to findings in another similar paper<sup>14</sup> but are more comprehensive.

Additionally, the authors examined other factors such as familial associations of FAS. They found that both mothers and maternal grandmothers had similar characteristics. The authors also made note that the women that bore FAS children also had varying degrees of cognitive impairment themselves. This finding was not quantified, and the authors did not draw conclusions from it. They hypothesized that there may be learned behavior or environmental component to the condition. (*i.e.*, FAS begets FAS).

The authors suggested screening any woman with a history of injury, especially alcohol related, and a history of mental health problems for substance abuse.

This paper may not be applicable to the public at large because the aboriginal population studied may not be representative of all patients. The risk factors identified will be helpful for physicians to help identify mothers at risk of having FAS offspring. One must remember that many of these characteristics are typical of patients with substance abuse problems in general, particularly alcohol. The odds ratios reported for the characteristics of interest noted were very large many of them exceeding ten.

The most intriguing findings reported in this paper are those of maternal cognitive impairment and grand maternal sharing of characteristics with the mothers of FAS offspring. The higher incidence of cognitive impairment in mothers of FAS children may possibly be because the mothers themselves suffer from the effects of prenatal exposure to alcohol or alcoholism itself. The authors also identified a familial link which may represent a cycle of maternal behavior leading to offspring behavior which propagates the cycle of FAS. Similar observations were made in a study by Viljoen *et al* in South African women.<sup>15</sup> Clearly, these findings deserve additional attention.

In summary, this paper identifies risk factors that can help identify mothers at risk of having a child with FAS. The authors recommend screening of gravid women with a history of injury or mental health problem for substance abuse. The authors also noted that a significant number of mothers to FAS offspring have cognitive impairment themselves. This paper also examines characteristics of maternal grandmothers which may shed light on the genetic predisposition to FAS among affected individuals. I would encourage interested individuals to delve further into these two findings. This paper is worth reading and will spur on future research.

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