Alcohol consumption during pregnancy

Looking at the history of humankind, the harmful effects caused by alcohol use among pregnant women is a problem recognized in several instances. Aristotle himself, in the 4th century BC, warned about them: "Drunken women most often bring forth children like unto themselves, morose and languid...". During the epidemic in 1700, with gin consumption in London, fetal, newborn, and infant mortality increased sharply among floppy and hypotonic cases.

However, the early medical descriptions published regarding the effects of prenatal exposure to alcohol (PEA) were the work of two French pediatricians, Jacqueline Rouquette (1957) and Paul Lemoine (1968).[1] In spite of this, most articles about this topic mention Smith and Jones as those who first described and defined, in 1973, "fetal alcohol syndrome" (FAS).[2]

To date, this definition has not significantly changed and encompasses three typical aspects: characteristic facial features, pre- and post-natal growth deficiencies, and neurodevelopmental and behavioral alterations. Since then and so far, approximately 17 000 scientific articles have been published that have helped to establish a broad range of effects that depend on alcohol doses consumed during pregnancy. Such broad range of physical, neurocognitive, and behavioral effects related to PEA has been referred to as "fetal alcohol spectrum disorder" (FASD). FAS is the most severe presentation of FASD.[1-3]

FASD is considered a major public health problem worldwide that has been barely included in health policy planning, pre- and postgraduate training, and medical practice in our country. Specifically, in perinatology and pediatrics, it is little recognized and diagnosed although a child's and their family's quality of life depends on its detection and a timely intervention. FASD currently represents the leading preventable congenital cause of intellectual disability in the Western world.[4]

In 2010, Sergio Evrard, M.D., did an excellent review on this subject published in *Archivos Argentinos de Pediatría* by describing the characteristics typical of FAS and FASD.[1] This article provides details about the basic requirements for the diagnosis of both of the above-mentioned conditions. The criteria have been refined in subsequent publications, which clarify that it is enough to corroborate the triad of specific craniofacial dysmorphisms, delayed growth, and mental disorders that mainly affect executive functions,[2] to define FAS.[3]

Different national studies have demonstrated that adolescents start using alcohol at an early age (80 % before 15 years of age) and that consumption patterns between men and women are now the same. Considering that 45 % of pregnancies are not planned and that between 15 % and 25% of women have binge drinking episodes, which means drinking more than 4 standard drinks on the same occasion (standard drink: 14 g of alcohol, equivalent to one glass of beer, one glass of wine or one measure of distilled spirits),[3,5] it is inferred that a significant percentage of pregnant women will expose their fetuses to significant amounts of ethanol before knowing they are pregnant.

An important study done in the province of Santa Fe with 614 women showed that 75.2 % had consumed at least one alcohol drink and that 15.1 % admitted that they had a binge drinking episode during gestation. In addition, less than half of women discontinued alcohol use during pregnancy, although most stated that they had reduced it.[5]

The Division of Neonatology of Hospital Misericordia, together with a group of investigators from Instituto de Investigación Médica Mercedes y Martín Ferreyra, carried out a clinical study about the different physiological effects of exposure to non-teratogenic doses of alcohol during pregnancy,[6] as a continuation of a series of preclinical experiments on this topic.[7] This study established, using comprehensive interviews, three PEA categories: no or uncommon consumption, moderate consumption, or binge consumption. Newborn infants were stimulated with the smell of little amounts of alcohol and of lemon (new smell), while their physiological and behavioral responses were assessed. A finding of interest of this study was that newborns whose mothers had had binge consumption episodes showed respiratory depression and emotional behaviors indicative of alcohol odor recognition and affinity towards the sensory cue of the drug.[6]

In addition, several epidemiological studies have observed that PEA is a risk factor for sudden infant death syndrome (SIDS).[8] As secondary

information of the study by Anunziata et al. (2020), it was observed that there was no registration of legal or illegal drug use during pregnancy in the mothers' medical records, which evidenced the need to conduct guided interviews to collect such information.[9] W. Hay, M.D. and former President of the American Academy of Pediatrics, highlighted the need to investigate less common fetal programming concepts, including *in utero* exposure to alcohol and addictive substances, which subsequently affected an individual's development and integrity.[10]

In 2018, the Secretariat of Comprehensive Drug Policies of Argentina (Secretaría de Políticas Integrales sobre Drogas de la Nación Argentina, SEDRONAR) launched a campaign with the slogan "If there is a baby, don't drink" to warn that there was no alcohol amount considered safe during pregnancy (see https://www.youtube.com/watch?v=mgMc0JrXYfc). It is important to have public policies that address this problem in a comprehensive manner, focused on community prevention, local research, and health care team training. Some instruments are available to detect these disorders, but they have a high health, financial, educational, individual, and social cost. An active approach to this problem calls for an intersectoral joint effort among the health, education, and research fields and the motivation of the perinatal health and pediatric team.

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