

The Association of Alcohol Consumption with Pregnancy Complications

Victor Campos de Albuquerque¹, Ibrahim Andrade da Silva Batista¹, Érica Dayse de Sousa Melo¹, Marcus Aurélio Loiola Silva¹, Thalles Nunes da Silveira e Oliveira¹, Vicente Clinton Justiniano Flores²

¹Student of Piauí State University, ²Student of Santo Amaro University

Abstract:- Alcohol intake throughout the gestational period increases the risk of complications to the fetus. Drinking alcohol during pregnancy is linked to several occurrences in this phase, such as precipitation of labor and abortion, among others. The purpose of this study is to verify the association between alcohol consumption and the increased risk of pregnancy complications. It has been noted that in recent years there has been a reduction in the rate of reduction of deaths due to infectious diseases, and in contrast, an increase in deaths attributed to congenital malformations. What has been observed is that this use of these substances has been increasingly constant. Considering the harms that the consumption of alcohol by pregnant women generate, there is a duty by health professionals to make a good history prenatal period to detect the possible consumption of these substances. Prophylaxis for women should be based primarily on the emphasis on reporting the various harms and harms that ingestion of this substance can cause to the fetus, as the physical and mental disorders that may occur as a result of alcohol use in pregnancy are completely avoidable if the woman stops taking this intake. Thus, in addition to highlighting the need and importance of total abstinence from alcohol during pregnancy, it is important to clarify their potential harm; so that child mortality from these causes can be reduced.

I. INTRODUCTION

Alcohol consumption has been with mankind for many years to come up with an idea for 6000 a. C. there were areas in the Middle East where it was already produced for human consumption. Currently, it is known that alcohol intake throughout the gestational period increases the risk of complications due to the possibility of embryotoxicity and teratogenicity to the fetus, which can be considered a serious public health complication. Thus, it is necessary to value prenatal care programs with effective actions that enable early interventions, as well as educational programs that show the harm of the practice of such behaviors in pregnancy.

Fetal nutrition begins from the occurrence of fertilization, in which the bond of interdependence between the parent and the new human being that begins to have its development and growth begins. Thus, the reciprocity between mother and child become mutual, whose maternal daily habits gain great importance and alcohol consumption is one of the factors of great influence throughout this process.

Drinking alcohol during pregnancy is linked to several occurrences in this phase, such as precipitation of labor, abortion, early detachment of the placenta, among others. This substance, as well as acetaldehyde, crosses the placental barrier towards the amniotic fluid, and the fetal liver cannot metabolize these substances. It is important to highlight the need for disclosure and attention to the dangers these substances pose to pregnancy. Thus, the relevance of supervision to the history of alcohol consumption in women in the reproductive phase, especially pregnant women, stands out.

It is observed that obtaining the affirmation of alcohol consumption during gestation is sometimes not an easy task, as this involves socio-cultural and moral factors, such confirmation may lead to some embarrassment and embarrassment to women who to avoid them may come to the deny. Besides, there is also the unpreparedness of some professionals to deal with this theme and work satisfactorily investigating and detecting the usual signs and symptoms of alcohol consumption. Thus, this literature review aims to verify the association between alcohol consumption and the increased risk of complications in pregnancy and to help prevent such occurrences.

II. METHODOLOGY

This literature review used the Medline, Lilacs, Pubmed and Scielo databases from 2000 to 2019. The keywords used were " pregnancy " and " alcohol ", " complications " and " psychoactive substances " and their corresponding " pregnancy " and " alcohol " and " complications " and " psychoactive substances ". Exclusion criteria were: articles published in languages other than Portuguese and English. After reading the titles of the articles, it was noted that some of them were repeated in different bases and others did not meet the criteria of this study. Sixty- five articles were selected for reading the abstract and excluded those that did not concern the purpose of this study, and the largest number of exclusions related to the disposition of the themes described in these articles with the objectives of this review. Thus, after reading the abstracts, 20 articles were selected that met the initially proposed criteria and were read in full.

III. DEVELOPMENT

In recent years, there has been a reduction in the rates of reduction in deaths due to infectious diseases, and in contrast, an increase in deaths attributed to congenital malformations. Child mortality is considered an indication of the health status of a nation and a reflection of socioeconomic, public health, child health and women's situations¹. Among the probable causes of malformations, except those of environmental origin, is attributed to some medicines and drugs such as cigarettes and alcohol, besides illicit drugs. Susceptibility to the effects of drugs on the fetus is related to the period of exposure throughout pregnancy, the frequency of exposure, the type of drug and substances contained in the drug and the characteristics of the person's body, which shows the necessary caution with the administration. medication to pregnant women². However, what has been observed is that this use of these substances has been increasingly constant. Some studies have shown that consuming alcohol and tobacco during pregnancy is not recommended³. These risk factors are fueled by particularities in developing countries such as Brazil because of their inability to provide adequate access to health services, difficulty in controlling drug sales in pharmacies, vigilance over poor drug sales, and people's confidence in the power of these substances⁴.

The use of alcohol by pregnant women is generally associated with a low level of education, a high number of births, poor socioeconomic conditions, drug use, infectious diseases and malnutrition⁵. The occurrence of alcoholism among females is lower when compared to that found among males, being around 5.7%. Even so, the bad repercussions around body, mental and social health are, unfortunately, several^{6,7}. Studies show the dependence of psychoactive substances in women need different forms of treatment and unique approaches to them, thus, the search and use of treatments focused on their characteristic needs⁵.

In general, alcohol consumption is started later in women than in men, however, the problems arising from this use arise more in females than in males, taking into account the period of use. Social and cultural characteristics act on women more strongly than men concerning the pressure to start alcohol consumption and there is also greater pressure to stop its use if it is abusive. There is greater rebuke under women who have poor control with drinks and less with men⁸. Recently, alcohol addiction in women has been further investigated. There is a higher absorption of alcohol due to the higher proportion of body fat and less total body water compared to men. That is, for the same consumption, serum alcohol concentrations are higher in women than in men^{6,7,8}. In the beginning, alcohol addiction by women is often denied and alcohol consumption is covert, in general, this picture is followed by comorbidities with psychological and mental problems, such as depression, where alcohol use It can be aggravated in an attempt to suppress its signs and symptoms by the individual. At this moment, the discovery of this situation is made during a routine consultation with the clinician or

gynecologist, however, in the vast majority of cases, these professionals are not able to guide these patients⁹.

Recently, the relationship between psychoactive substance use during pregnancy and its implications for neonates has been more closely approached and studies show that those who use alcohol throughout the pregnancy and after pregnancy place their offspring at clear risks. several clinical and experimental studies^{10,11,12}. It is not known what the exact dose of alcohol that may cause harm to the fetus, but current data report that a weekly dose can now be related to the greater chance of development of mental difficulties¹⁰. Thus, by exposing the fetus to a teratogen agent, such as certain psychoactive substances, mothers expose their children to submit one the greater chance of developing severe perinatal diseases such as malformations, premature birth, fetal distress, infection and sequelae of various types. The baby child of a severely alcoholic mother is hyperexcited, hypersensitive, irritable, has an altered sleep pattern, perspires more than normal, and may have apnea. Moreover, the vertical transmission of infections related to the use of psychoactive substances, such as hepatitis B and C, syphilis and HIV, is also expanded¹³. The teratogenic effects of alcohol on the fetus have been reported by several experimental studies. In pregnant women who drink alcohol, the placenta is permeable and allows the transfer of this substance to the fetus, there are likely other phenomena that justify the serious effects that exposure to alcohol can cause the fetus; however, these are still unknown. Alcohol is converted to the acetic aldehyde by a reaction made by the fetal liver, that is, this is the first substance derived from alcohol metabolism in the metabolism of the fetus and mother. In experimental studies with nervous system cells, it was observed that acetaldehyde impairs the development and growth of the neuronal complex. Moreover, it may facilitate the occurrence of cell death due to apoptosis or necrosis due to oxidative stress¹⁴. There are also changes in growth factors such as IGF-I and IGF-II¹³.

During the first weeks of pregnancy, the harms that can be caused may have a mutagenic or cytotoxic origin, generating severe chromosomal changes. In the first trimester, there are chances of facial dimorphism and malformations; since this period is critical for organogenesis; In the second semester, there is an increase in the occurrence of miscarriages that occur spontaneously; and in the third trimester alcohol intake is responsible for damaging other structures of the nervous system, such as the prefrontal cortex, hippocampus, and cerebellum. Thus, there may retard the fetal growth, the difficulty of baby design to increase the chances of infections, loosening early placental, Early labor, in addition to the increased likelihood of the presence of meconium into the amniotic fluid, which is a strong indication of fetal distress^{14,15}. In addition to all of the above, ethanol also passes into breast milk at approximately 2% of the concentration of alcohol in the mother's bloodstream. The going of alcohol to blood and milk will depend on particular characteristics inherent in each individual. Concerning children breastfed by alcoholic mothers, they may be affected by effects such as

changes in sleep pattern, neuromotor development, and learning. Therefore, it is strongly recommended that a woman who has been drinking alcohol should stop breastfeeding for hours after drinking¹⁵⁻¹⁸.

Given the harms that alcohol consumption by pregnant women generate, there is a duty by health professionals to practice anamnesis with greater precision during the prenatal period. Prophylaxis performed with women should be based primarily on the various harms and harms that ingestion of this substance can cause to their children, which can have lifelong sequelae due to this attitude practiced by their mother. Thus, abstinence in this phase is indispensable, since there is no safe dose of ethanol that can be taken during pregnancy and the neonatal period^{19,20}.

IV. CONCLUSION

Therefore, considering the above, awareness and prevention of alcohol use during pregnancy can be considered extremely important, since the physical and mental disorders that may occur as a result of alcohol use in pregnancy are completely preventable if the woman fails to drink alcohol. Thus, in addition to demonstrating the need and importance of total abstinence from drinks, it is also important to make clear the data that the use of this substance can cause to their children, and these permanent and irreversible damages. Thus, it is possible to emphasize the need for multi-professional teams acting from the detection of women in risk situations to the neonatal period, so that there can be an effective reduction in the number of anomalies and damage due to the use of these substances. women and so that it can be reached from a better perspective in reducing Brazilian infant mortality rates.

REFERENCES

- [1]. Mathias TAF, Assunção AN, Silva GF. Óbitos infantis investigados pelo Comitê de Prevenção da Mortalidade Infantil em região do Estado do Paraná. *Ver Esc Enferm USP*. 2008;42(3):445-53.
- [2]. Guerra CGB, Silva AQB, França LB, Assunção PMB, Cabral RX, Ferreira AAA. Utilização de medicamentos durante a gravidez na cidade de Natal, Rio Grande do Norte, Brasil. *Rev Bras Ginecol Obstet*. 2008;30(1):12-8.
- [3]. Freire K, Padilha PC, Saunders C. Fatores associados ao uso de álcool e cigarro na gestação. *Rev Bras Ginecol Obstet*. 2009;31,(7):335-41.
- [4]. Bertoldi AD, Tavares NUL, Hallal PC, Araújo CL, Menezes AMB. Medicine use among adolescents: the 11-year follow-up of the 1993 Pelotas (Brazil) birth cohort study. *Cad Saúde Pública*. 2010;26(10):1945-53.
- [5]. García-Valdecasas-Campelo E, González-Reimers E, Santolaria-Fernández F, De La Vega-Prieto MJ, Milena-Abril A, Sánchez-Pérez MJ et al. Brain atrophy in alcoholics: relationship with alcohol intake; liver disease; nutritional status, and inflammation. *Alcohol Alcohol* 2007; 42(6):533-8.
- [6]. Zilberman ML, Blume SB. Domestic violence, alcohol and substance abuse. *Rev Bras Psiquiatria* 2005; 27 Suppl 2:S51- 5.
- [7]. Brasiliano S, Hochgraf PB. Drogadicção feminina: a experiência de um percurso. In: Silveira DX, Moreira F (eds.). *Drogas, dependência e sociedade*. São Paulo: Atheneu, 2005.
- [8]. Zilberman ML, Tavares H, Andrade AG. Discriminating drug-dependent women from alcoholic women and drug-dependent men. *Addict Behav* 2003; 28(7):1343-9.
- [9]. Gahagan S, Sharpe TT, Brimacombe M, Fry-Johnson Y, Levine R, Mengel M et al. Pediatricians' knowledge, training, and experience in the care of children with fetal alcohol syndrome. *Pediatrics* 2006; 118:e657-8.
- [10]. Mattson SN, Schoenfeld AM, Riley EP. Teratogenic effects of alcohol on brain and behavior. National Institute on Alcohol Abuse and Alcoholism, 2001.
- [11]. Stratton K, Howe C, Battaglia F (eds.). *Fetal alcohol syndrome: diagnosis, epidemiology, prevention, and treatment*. Washington: Institute of Medicine, National Academy Press, 1996.
- [12]. Grinfeld H. What effects can be expected of prenatal exposure in pregnant mice and their offspring? *Einstein* 2004; 2(3):187-92.
- [13]. Niccols A. Fetal alcohol syndrome and the developing socio-emotional brain. *Brain Cogn* 2007; 65(1):135-42.
- [14]. Goodlett CR, Horn KH. Mechanisms of alcohol damage to the developing nervous system. National Institute on Alcohol Abuse and Alcoholism, 2001.
- [15]. Hoyme HE, May PA, Kalberg WO, Kodituwakku P, Gossage, JP, Trujillo PM et al. A practical clinical approach to diagnosis of fetal alcohol spectrum disorders: clarification of the 1996 Institute of Medicine Criteria. *Pediatrics* 2005; 115(1):39-47.
- [16]. Burd, L. Fetal alcohol spectrum disorders. São Paulo: Conference at the 1st ABRAMD Congress, 2008.
- [17]. Streissguth AP, Bookstein FL, Barr HM, Sampson PD, O'Malley K, Young JK. Risk factors for adverse life outcomes in fetal alcohol syndrome and fetal alcohol effects. *J Dev Behav Pediatr* 2004; 25(4):228-38.
- [18]. Kalberg WO, Buckley D. Educational planning for children with fetal alcohol syndrome. *Ann Ist Super Sanita* 2006; 42(1):58-66.
- [19]. Chang G, Wilkins-Haug L, Berman S, Goetz MA. Pregnant women with negative alcohol screens do drink less: a prospective study. *Am J Addict*. 1998;7(4):299-304.
- [20]. Testa M, Reifman A: Individual differences in perceived riskiness of drinking in pregnancy: antecedents and consequences. *J Stud Alcohol*. 1996, 57: 360-367.