AMERICAN ACADEMIC PUBLISHER

INTERNATIONAL JOURNAL OF MEDICAL SCIENCES

ISSN NUMBER: 2692 - 5206 Volume 6. No 01. January ,2026

EFFECTS OF FOLIC ACID DEFICIENCY DURING PREGNANCY ON THE DEVELOPMENT OF POSTNATAL DEPRESSION

Abdurazakova Robia Sheralievna, Karshiev Ziyadula Khazratovich
Assistants of the Department of Psychiatry, Medical Psychology and Narcology Samarkand State Medical University, Samarkand, Republic of Uzbekistan

Annotation

To check whether folic acid supplementation during pregnancy is associated with the onset of symptoms of maternal depression within three months after giving birth.
Methods. This study involved 86 women who were divided into three groups: did not take folic acid supplements during pregnancy; took them only during one trimester of pregnancy; and took them during two or three trimesters. Symptoms of depression were assessed three months after delivery using the Edinburgh Postpartum Depression Scale (EPDS) at cut-off points ≥ 10 (mild symptoms) and ≥ 13 (moderate to severe intensity). Results. The overall prevalence of mild symptoms was 20.2% (95%CI 19.0–21.5), and moderate and severe — 11% (95%CI 10.0–12.0). The prevalence of EPDS ≥ 10 was 26.8% (95%CI 24.0–29.5) among women who did not take folic acid and 18.1% among both those who took it during one trimester of pregnancy (95% CI 16.1–20.1) and those who took it for two or three months. trimesters (95% CI 16.0–20.2). The prevalence of EPDS ≥ 13 was 15.7% (95%CI 13.5–17.9) in those who did not take folic acid, 9.1% (95%CI 7.5–10.6) in those who took it during one trimester, and 9.4% (95%CI 7.8–11.0) in those who I took it for two or three trimesters. In the adjusted analyses, there was no statistically significant association between folic acid intake during pregnancy and the onset of symptoms of depression three months after delivery. Conclusion. There was no association between folic acid intake during pregnancy and postpartum depression for three months.

Keywords

Pregnancy; Folic acid; Depression, Postpartum period.

Depressive disorders are classified by the World Health Organization (WHO) as the most significant cause of global disability, especially among women [1, 2]. They are characterized by sadness, loss of interest or pleasure, guilt or low self-esteem, sleep or appetite disruption, feeling tired and poor concentration, which can be prolonged or recurrent, significantly impaired human ability to cope with everyday life [1, 2]. Postpartum depression (PPD) is a common complication of pregnancy, the severity of which depends on factors such as socio-economic context and family support [4]. PPD has adverse consequences not only for the mother, but also for the family because it can affect the child's development (for example, it is associated with a higher risk of low body weight at birth in the first year of life), create difficulties in establishing a connection between mother and child and cause disturbances in the social, affective and cognitive aspects of development [7, 8]. The etiology of PPD is considered to be related to biological, genetic, hormonal, psychosocial and environmental factors [3]. Deficiencies in dietary factors such as folate/folic acid, vitamin B12, polyunsaturated fatty acids, selenium, zinc, calcium and iron are also associated with PPD [3, 11]. Folic acid is part of the complex of B vitamins (vitamin B9). Meta-analysis of observational studies has shown that low folate levels are associated with depression in the general population [14]. Folate is the major determinant of 1-carbon metabolism where S-adenoszyl methionine (SAM) is formed. SAM gives important

AMERICAN ACADEMIC PUBLISHER
INTERNATIONAL JOURNAL OF MEDICAL SCIENCES
ISSN NUMBER: 2692 - 5206 Volume 6. No 01. January ,2026

methyl groups for neurological function. In addition, elevated plasma homocysteine is a functional marker of folate deficiency, and elevated levels of homocysteine are found in patients with depression [5, 6].

WHO recommends daily oral iron and folic acid supplementation as part of prenatal care to reduce the risk of low birth weight, maternal anaemia and iron deficiency [7]. There are several published studies that have assessed the relationship between folic acid supplementation or folate levels during pregnancy and postpartum dementia [3, 9], only two of which were population-based [2].

Purpose of this review was to assess the prevalence of symptoms of depression three months after delivery and its relationship with the use of folic acid supplements among mothers belonging to the birth cohort.

Materials and methods. Participants in this study were pregnant women who were recruited in the second or third trimester during prenatal care visits. Prior to registration, written informed consent was obtained from all participants of the study. Data on symptoms of depression were collected using the Edinburgh Postnatal Depression Scale (EPDS) [4], which was tested in our conditions [43]. EPDS is used to screen for depression in women during pregnancy and the postpartum period, but not as a diagnostic tool. It contains 10 points, each of which is rated from 0 to 3, so the total score is between 0 and 30. The higher the score, the higher the level of symptoms of depression. Several cut-off points were used to determine depression, including EPDS 10, EPDS 13 and EPDS 14 scores. In this study, we considered EPDS 13 as a symptom of depression. Blood samples were collected and evaluated in the laboratory of the maternity hospital, where these laboratory tests are conducted regularly with strict adherence to quality control standards. Vitamin B12, folate and 25-hydroxyvitamin D were tested with the Cobas e601 analyzer. The vitamin B12 content in the serum was quantified with the Roche commercial kit (catalogue number 7,212,771,190), while the total folate content in hemolyzed whole blood was measured with the Roche commercial kit (catalogue number 7,559,992,190). Finally, levels of 25-hydroxyvitamin D were determined using the commercial Roche kit (catalogue number 9,038,078,190). Vitamin D status was classified as deficiency/insufficiency (25-hydroxyvitamin D < 75 nmol/l) and sufficiency (25-hydroxyvitamin D 75 nmol/l) using acceptable cut-off points [4].

Results of the study. Of 86 women included in the current analysis, 39 reported folic acid use. Among them, 29 (33.7%) reported the use of folic acid during pregnancy. Among those who used it, 70.9% (n = 61) used the exclusive folic acid supplement (without any other vitamins or mineral salts) at some point during pregnancy. The figure shows the trimesters of folic acid use by the women who participated in the study. Of the 66 women who reported folic acid use during pregnancy, only 68 reported trimester use. Of these, 43.8% used folic acid only during the first trimester. Among women who did not use folic acid, the prevalence of EPDS 10 was 26.8% and 18.1% both among those who used it during one trimester of pregnancy and among those who used it for two or three trimesters. The prevalence of EPDS 13 was 15.7% among women who did not use folic acid, 9.1% among those who used it within one trimester and 9.4% among those who used it within two or three trimesters. For mild depressive symptoms (EPDS 10) the variables that remained to be corrected in the final model were education, support from the child's father, alcohol consumption during pregnancy, number of children and depressive symptoms during pregnancy. Regarding moderate and severe symptoms (EPDS 13), variables that remained in the final model were "living with a partner", "number of children" and "depressive symptoms during pregnancy". The prevalence of mild depressive symptoms three

AMERICAN ACADEMIC PUBLISHER
INTERNATIONAL JOURNAL OF MEDICAL SCIENCES
ISSN NUMBER: 2692 - 5206 Volume 6. No 01. January ,2026

months after delivery was 20.2% and moderate and severe depressive symptoms 11%. The use of folic acid during pregnancy had a protective effect in the unprocessed analysis for both cut-off points, but lost relevance in adjusted analyses. This study has some limitations. It was not possible to estimate the dosage of the additives used, only the information on the use in trimesters of pregnancy was analyzed, but without guarantee that the additive was used during the entire period of the trimester under consideration. In addition, our analysis is based on self-report, without remembering diet, consumption of folic acid-enriched products or levels of folate in the serum. Similarly, it was not possible to evaluate the use of supplements in the pre-conception period.

Conclusions. Finally, it should be noted that our study has shown that the existing protective effect between the use of folic acid and PDA seems to disappear after taking into account concomitant factors, and several forms of analysis have led to the same result. Given that PDD is considered a problem with multifactorial etiology, with negative consequences for women, families and children, it is important that future studies aim to measure the nutritional status of folates using objective methods such as serum level measurement. There was no association between folic acid intake during pregnancy and postpartum depression for three months.

References:

1. Batirbekovich, K. R., Sabrievna, V. A., & Alamovich, K. A. (2022). Psychopharmacotherapy of Depressive Disorders in Alcoholism. Eurasian Journal of Humanities and Social Sciences, 8, 19-22.
2. Khayatov, R. B., Velilyaeva, A. S., & Kurbanov, A. A. (2022). OPTIMIZATION OF THERAPY OF ALCOHOL WITHDRAWAL SYNDROME IN PATIENTS WITH SUB- DEPRESSION. Евразийский журнал медицинских и естественных наук, 2(5), 189–192.
3. Khayatov, R. B., Velilyaeva, A. S., & Kurbanov,. A. A. (2022). AFFECTIVE DISORDERS AS A WEIGHTENING FACTOR IN ALCOHOL DEPENDENCE THERAPY. Евразийский журнал медицинских и естественных наук, 2(5), 193–196.
4. Telmanovna, X. S., & Batirbekovich, X. R. (2023). Psychopharmacotherapy of Depressive Disorders in Alcoholism. Eurasian Research Bulletin, 16, 179-182.
5. N. Turaeva (2023). CLINICAL-LABORATORY FEATURES OF INTERSTITIAL NEPHRITIS IN CHILDREN WITH PURINE DYSMETABOLISM. Science and innovation, 2 (D12), 135-140. doi: 10.5281/zenodo.10324931
6. N. Turaeva (2023). ANTIOXIDANT THERAPY IN PATIENTS WITH CHRONIC NEPHROTIC GLOMERULONEPHRITIS. Science and innovation, 2 (D12), 131-134. doi: 10.5281/zenodo.10324779
7. Меликова Дилшодахон Уктам Кизи, Ахмеджанова Наргиза Исмаиловна, Тураева Назира Юлдашевна, Юлдашев Ботир Ахматович, & Абдурасулов Фозил Пардаевич (2020). Клинические особенности течения хронического пиелонефрита у детей на фоне анемического синдрома. Достижения науки и образования, (1 (55)), 66-69.
8. Очилов, У., Кубаев, Р., & Хаятов, Р. (2016). Психические расстройства при употреблении психоактивных веществ с вич-инфекцией. Журнал проблемы биологии и медицины, (2 (87), 184–186.

9. Раджабов Хикмат Тошевич, Хаятов Рустам Батырбекович, & Велиляева Алие Сабриевна (2020). КЛИНИКО-ПСИХОЛОГИЧЕСКИЕ И НЕЙРОФИЗИОЛОГИЧЕСКИЕ ОСОБЕННОСТИ НЕПСИХОТИЧЕСКИХ ПСИХИЧЕСКИХ РАССТРОЙСТВ У ЛИЦ ПОЖИЛОГО ВОЗРАСТА. Вестник науки и образования, (23-3 (101)), 75-78.
10. Раджабов Х.Т., Тургунбаев А.У., Кубаев Р.М., & Хаятов Р.Б. (2021). ДЕПРЕССИЯ И ТРЕВОГА У БОЛЬНЫХ АЛКОГОЛИЗМОМ, ОСЛОЖНЕННЫМ НИКОТИНОВОЙ ЗАВИСИМОСТЬЮ. Вестник науки и образования, (17-2 (120)), 134-137.
11. Тураева Назира Юлдашевна (2020). Клинико-лабораторные особенности течения дисметаболической нефропатии у детей с нарушением пуринового обмена. Достижения науки и образования, (5 (59)), 86-88.
12. Тураева, Н., & Абдукадырова, Н. (2022). Оптимизация терапии хронического гломерулонефрита у детей. Журнал вестник врача, 1(2), 118–120.
13. Хаятов Рустам Батырбекович, Велиляева Алие Сабриевна, Тураев Бобир Темирпулатови, & Тураев Толиб Махмуджонович (2019). Аффективные расстройства у больных алкогольной зависимостью как фактор риска развития суицидального поведения. Достижения науки и образования, (11 (52)), 96-98.
14. Хаятов Рустам Батырбекович, & Велиляева Али Сабриевна (2020). Особенности развития и течения аффективных расстройств при сахарном диабете. Достижения науки и образования, (5 (59)), 62-64.
15. Хаятов Рустам Батырбекович, Велиляева Алие Сабриевна, & Абдуразакова Робия Шералиевна (2020). Особенности возникновения и течения психоорганических расстройств при сахарном диабете. Достижения науки и образования, (7 (61)), 31-33.
16. Хаятов, Р., & Велиляева, А. (2022). Влияние тревожно-депрессивных расстройств на тяжесть течения и качество жизни у больных сахарным диабетом 2 типа. Журнал вестник врача, 1(4), 99–102. https://doi.org/10.38095/2181-466X-2020974-98-101
17. Хаятов, Р., Велиляева, А., Мардиев О., & Курбанов, А. (2022). Особенности коморбидного течения тревожно-депрессиных расстройств и личностных изменений при сахарном диабете 2 типа. Журнал вестник врача, 1(1), 104–108. https://doi.org/10.38095/2181-466X-2021981-103-107
18. Каршиев Зиядулло Хазратович, Хаятов Рустам Батырбекович, Шерматов Озод Норбекович, Раджабов Хикмат Тошевич, & Рузиева Диана Джамаловна (2021). АФФЕКТИВНЫЕ РАССТРОЙСТВА КАК ОТЯГОЩАЮЩИЙ ФАКТОР В ТЕРАПИИ АЛКОГОЛЬНОЙ ЗАВИСИМОСТИ. Вестник науки и образования, (5-2 (108)), 21-24.
19. Хаятов, Р., Велиляева, А., Мардиев О., & Курбанов, А. (2022). Особенности коморбидного течения тревожно-депрессиных расстройств и личностных изменений при сахарном диабете 2 типа. Журнал вестник врача, 1(1), 104–108. https://doi.org/10.38095/2181-466X-2021981-103-107
20. Очилов, У., Кубаев, Р., & Хаятов, Р. (2016). Психические расстройства при употреблении психоактивных веществ с вич-инфекцией. Журнал проблемы биологии и медицины, (2 (87), 184–186. извлечено от https://inlibrary.uz/index.php/problems_biology/article/view/3568