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IDENTIFICATION OF OBSTETRIC, PSYCHOSOCIAL FACTORS AND REPRODUCTIVE HORMONES CHANGES ON POST- PARTUM DEPRESSIVE SYMPTOMS

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ABSTRACT

Objective: to identify the effects of demographic, obstetric, psychosocial risk factors and the effects of reproductive hormonal changes postnataly on postpartum depressive symptoms. **Design:** A prospective study based on questionnaires including special forma answered by the participants and scored according to the Edinburgh Postnatal Depression Scale (EPDS) and estimation of hormonal levels {Estrogen, Progesterone, testosterone} postnataly. **Setting:** AL-ZAHRA'A Maternity and Pediatric teaching hospital in AL-NAJAF city. Participants: one – hundred i-one woman who attended to the post natal and neonatal unit, during the study period from to April to October 2011. **Intervention:** women with high scores (13 or more) by EPDS, were advised to be seen by a psychiatrist. Main outcome measures: postpartum psychiatric symptom were assessed 2-8 weeks after delivery with the Edinburgh Postnatal Depression Scale {EPDS}, a widely used Scale, it assess symptoms of postpartum depression in the previous week; and comprises ten statements, each with four possible answers on a Scale ranging from 'no, not at all'(0) to 'yes, quite often' [6]. The EPDS sum score ranges from 0 to 30, with higher score indicating more depressive symptoms. We classified woman with a score of more than 12 as having postpartum depression. Previous researches indicated that this cut-off score has a sensitivity of over 80% and a specificity of 95% for identifying woman with clinically diagnosed postpartum depression in a community sample. [13] **Results:** form the one hundred one woman who assessed by the questionnaire, 24 had high score (13 or more), 36 had medium score (between 9 to 12) and 41 had low score (less than 9) according to EPDS. So, we consider the group of patients with high score as having depressive symptoms while patients with medium score and low score considered as a non-depressed. High score were found to be associated with: Presence of obstetrical complication, condition of the baby, postnatal stay, social factors (relation with husband and support at home), psychological history. Patients with depressive symptoms show lower values of reproductive hormones in comparism with the other group, but these differences are not significant statistically. **Aim of study:-**Study the effects of obstetrical, psychosocial factors and the relation between reproductive hormonal changes after delivery, with the post-partum depressive symptoms.

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INTRODUCTION

Childbirth contribute as a substantial risk to the mental health of women. Although the antenatal period is not a particularly high-risk time for the onset of new psychiatric disease, minor disorders do affect a significant minority of pregnant women. More significantly, in the year following childbirth, women who were previously well have a greatly elevated risk of being admitted to a psychiatric hospital, being referred to psychiatrist, suffering from a psychotic illness or developing severe depression. This risk is higher than their lifetime risk, and is much greater than for other women or men (Philip, 2006). Many women experience depressive symptoms during the postpartum period, ranging from mild complaints such as 'maternity blues'to clinically diagnosed postpartum depression (Blom, 2010). It is estimated that around 10% of new mothers encounter postnatal depression with most cases developing in the first three months after giving birth (Blom, 2010; Buultjens, 2007; ScottishIntercollegiate, 2011). The diagnosis is, however, often missed by health care pro - fessionals or not diagnosed early enough (American Psychological Association, 2002), because some symptoms of depression according to the diagnostic criteria (Beck, 2006) are difficult to recognize in post partumwomen.If post-partum depression is left untreated it can persist for months to years (Cooper, 1988), and may severely affect women's health and psychosocial wellbeing

(Beck, 2001 and Murray, 1997). In addition, there is ample evidence that post- partum depression is associated with disturbances in the behavioral and cognitive development of the offspring (Beck, 2001; Ramchandani, 2008; Robertson, 2004).

***Clinical features*:** Postnatal depression is regarded as any non-psychotic depressive illness of mild to moderate severity occurring during the first postnatal year. However, for a significant proportion of women, the illness may have its onset in the antenatal period (Buultjens, 2007). It is important to distinguish postnatal depression from "baby blues", the brief episode of miser y and tearfulness that affects at least half of all women following delivery, especially those having their first baby. It is also important that the term postnatal depression should not be used as a generic term for all mental illness following delivery. Mild psychological and transient depression is extremely common in the few days post-partum.This transient state of tearfulness, anxiety, irritation and restlessness has been variously described "blues" and it may occur in up to 70% of women (Keiyh Edmond, 2007). The signs and symptoms of post-natal depression are not different from those of depression in non-pregnant women and there are a number of antenatal factors that increase the risk of major post-partum depression (Keiyh Edmond, 2007). There is a high incidence ofrecurrence of post-partum depression in subsequent pregnancies (around 50%) (Philip, 2006). Mode of delivery has not been associated with an increased risk of post-partum depression (Blom, 2010). A worrying trend over the last few years has been that suicide is now the leading cause of maternal mortality. In the Confidential Enquiry into Maternal and Child Health 2000-2002 (Confidential Enquiry into Maternal and Child Health, 2001), there were a total of 30 deaths in the post-natal period in relation to psychiatric disorders. These 30 deaths were the result of suicide by hanging, jumping from a height, cutting of the throat or overdose. It is therefore obvious Approximately 0.1% of women post-partum may exhibit Some signs of psychosis (Keiyh Edmond, 2007). Post-partum psychosis: is a combination of mania and depression, suicidal thoughts, an expression of delusion and a wish to self-harm or to harm the baby. Women manifesting signs of post-partum psychosis should be referred immediately to a psychiatrist and transferred to a mother and baby unit where they can be appropriately cared for as5%of these women may commit suicide and the infanticide rate is also 5% if they are not treated (Keiyh Edmond, 2007).

Diagnosis: Depression is a common condition, affecting a large proportion of women of childbearing age. Studies are evenly divided in reporting postnatal depression as either more or less severe than depression at other times (Cooper, 1995; Whiffen, 1993; Hendrick, 2001 and Augusto, 1996), and there is little evidence that the nature of symptoms differs between postnatal and non-postnatal depression (Augusto, 1992 ande Murray, 1995). In diagnosing depression in the postnatal period, there is a risk that normal emotional changes may be mistaken for depression or may mask depressive symptoms (Murray, 1995). Depression can be classified as 'minor' or 'major'. Major depression can be divided into 'mild','moderate'and' severe' categories. Between 10 15 percent of women will suffer with some form of depression in the first year after delivery of the baby.At least 7 percent will satisfy the criteria of mild major depressive illness and many more could be described as having minor depression;3_5 per cent will suffer severe major postnatal depression.Without treatment, most women will recover spontaneously within 3-6months, however,linl described as having minor depression; 3_5 per cent will suffer severe major postnatal depression. Without treatment, most women will recover spontaneously within 3-6months, however, linlO will remain depressed at 1 year (Philip, 2005).

Adverse sequelae of postnatal depression Immediate:

Physical morbidity.
Suicide, infantcide.
Prolonged psychiatric morbidity.
Damaged social attachments to infant.
Disturbed emotional development of infant.

Social/ cognitive effects on the child. Psychiatric morbidity in the child. Marital breakdown. Future mental health problems. The importance of psychosocial factors in the aetiology of non- psychotic postpartum depression is in contrast to the biological factors predisposing to puerperal psychosis. Puerperal psychosis is largely affective in nature, although several studies comment on atypical features in the presentation such as mixed affective state, confusion and disturbed behaviour (Wisner, 1999). It typically presents in the early postpartum period, usually within the first month.

Risk factors: If risk factors predicting postnatal depression can be identified by screening this would allow optimum targeting of effective interventions. The evidence suggests that risk factors for postnatal depression are no different to the risk factors for non-postnatal depression. Three systematic reviews identified the following risk factors as having moderate to strong associations with postnatal depression: (Cooper, 1997; Wisner, 1994 and O'Hara, 1996). Past history of psychopathology and psychological disturbance during pregnancy low social support poor marital relationship recent life events "baby blues". Weak associations have been found with obstetric complications, a history of abuse, low family income and lower occupational status (O'Hara, 1999; Beck, 1996; Wilson, 1996; Forman, 2000). An American review found no evidence regarding the effect of early postpartum discharge (Grullon, 1997). The months following childbirth are a time of heightened vulnerability to depressive mood changes. Because of the abrupt and dramatic occuring in hormone levels after delivery, many studies have examined the role of hormonal factors in postpartum depression (Victoria Hendrick, 1998). There is no conclusive evidence on hormonal changes as a risk factor for postnatal depression (ScottishlntercollegiateI, 2011 and Adams, 2011). The earlier the onset of the depression and the more severe it becomes,the more likely is it that formal psychiatric intervention will be needed (Ramchandani, 2008).

Screening: Screening is the only one way in which recognition and management of PND might be improved. Screening tools have been devised to predict postnatal depression in the antenatal period. These have been based around known risk factors for postnatal depression, but many have not been properly evaluated to determine sensitivity, specificity and predictive value (Hewitt, 2009). The Edinburgh Postnatal Depression Scale {EPDS} was the most frequently used method to indicate women at higher risk of postnatal depression. All of the studies indicated beneficial effects of using the EPDS in reducing EPDS scores, although some of

the individual studies did not show statistically significant differences. Another issue that arose was the cut point used to distinguish between those women who were at higher risk of having PND and those who were not. The choice of cut point to indicate a positive test creates aunique issue that arises within diagnostic studies. Variationsin cut points lead to variations in measures of the accuracy of the test (i.e. sensitivity and specificity) and thus created difficulties within this review as the studies used different cut points on the EPDS (Hewitt, 2009). There is some evidence that, in research settings, combining two screening tools (the EPDS and the General Health Questionnaire, GHQ) may be more effective than either tool alone (Lee, 2000). The EPDS should be offered to women in the postnatal period as part of a screening programms for postnatal depression. The EPDS is not a diagnostic tool. Diagnosis of postnatal depression requires clinical evaluation. A cut-off on the EPDS of 10 or above is suggested for whole population screening.

Management: Untreated postnatal depression may be prolonged and may have a deleterious effect on the relationship between mother and baby and on the child's cognitive and emotional development. However, the response to both pharmacological and psychosocial interventions is good (Appleby, 1997). Postnatal depression and puerperal psychosis should be treated. Many women are reluctantto consider the use of psychotropic medicine during pregnancy and the postnatal period. The choice of treatment for postnatal depression should be governed by efficacy, incidence of side effects, likely compliance, patient preference and, in the case of pharmacological therapies, safety of use when pregnant or breast feeding (ScottishIntercollegiate, 2011). There are instances where the mother and infant may be at risk because of the mother's mental illness. Although rare, infanticide and suicide do occur. Multidisciplinary risk assessment and risk management protocols and, if necessary, local child protection procedures should always be followed when there Is the potential for serious harm to the mother and/or baby (Children, 1995). These should provide a protective framework by ensuring good communication between the family and professionals Pharmacological and physical management.

Hormonal therapies: Hormonal therapies have been the subject of considerable debate, however little reliable evidence is available. No evidence could be identified for the effectiveness of natural progesterone or synthetic progestogens in the treatment of postnatal depression (Lawrie, 2001). One double blind randomised controlled trial indicates that transdermal oestrogen (with cyclical progestogen) is more effective than placebo in moderate to severe postnatal depression (Lawrie, 2001 and Gregoire, 1996). However, concern about side effects, particularly endometrial hyperplasia and thrombosis, may limit its use. Antidepressants. A randomised controlled trial of the use of antidepressant therapy in postnatal depression carried out in a community setting in Manchester demonstrated a beneficial effect from neuroleptics as combined with at least one session of modified cognitive behavioural therapy (CBT) in women with mild postnatal depression (Appleby, 1997). Evidence from a case control study carried out in the United States suggests that both selective serotonin reuptake inhibitors SSRIs and tricyclic antidepressants (TCAs) are effective in postnatal depression (Wisner, 1992). Postnatal depression should be managed in the same way as depression at any other time, but with the additional considerations regarding the use of antidepressants when breast feeding and in pregnancy.

Social Support: The relationship between postnatal depression and dverse social circumstances is similar to that for depression generally. Both cultural and environmental factors are important when considering social support and little work has been done specifically in Scotland. There are various local initiatives and responsive services in Scotland offering support to the mother, the baby and family. Many of these have been established by practitioners with an interest in the field of postnatal depression and, like much of current practice, have not been subjected to rigorous evaluation (ScottishIntercollegiate, 2011).

Aim of study: To study the effects of sociodemographic, obstetrical, psycho-social and hormonal changes postpartum with the development of depressive symptoms.

PATIENTS AND METHODS

Sudy design: This is a prospective study using special forma, questionnaires to the participiants and scored according to Edinburg Postnatal Depression Scale (EPDS) which translated to Arabic then introduced to the women and hormonal levels(Estrogen, Progesterone, Testosterone) were estimated postnatally.

Patients: 101 Women who are delivered 2-8 weeks(vaginally or by c/s were attended to the postnatal and neonatal units. Patients with all types of abortions are not included in our study.

Statistical analyses: The statistical analyses were performed with commercially available software (SPSS version 18). One way ANOVA test and Chi squared (X2) were used to assessed significant differences between groups. P-value $\leq 0.05$and ≤ 0.01 were considered to have statistically significant and highly significant at 5% and 1% respectively.

RESULTS

- Younger age was almost dominated. However age structure shows no significant differences between non-depressed, and depressive symptoms groups.
- Parity, mode of delivery and place of delivery shows no significant differences between the studied groups.
- Vaginal delivery was higher than C/S in both groups.
- Hospital as place of delivery was the most dominant in both groups.
- Depressive symptoms patients show high percent (70.83%) of Comp, of pregnancy in comparison with nondepressed group. According to presence or absent of these complication, significant differences were detected between the groups.
- Condition of baby shows significant differences between the studied groups. Lower percentage of baby in good condition was observes in depressive symptoms patients.
- Puerperal Complication shows no significant differences between the studied groups.
- Although, most patient stay (>lday) in the two groups, Postnatal stay shows significant differences between them.

- No significant differences were observed between studied groups in regard to Breast feeding.
- Relation with husbandand Support at home shows significant differences between studied groups. Good relation was the most prominent in both groups, and most depressive symptoms and non-depressed patients answered yes about support at home.
- Social income differed slightly (but not significant), the two groups shows high percent of poor income.
- Nutrition differed slightly (but not significant), the two groups shows high percent of poor nutrition.
- Both factors concerning history shows significant differences between studied groups. The most screened mothers say no in both groups.
- Depressive symptoms patients shows lower values of Estrogen, Progesterone and Testosterone in comparison with other group, but these differences are not significant statistically.

DISCUSSION

The World Health Organisation (WHO) predicts that depression will be the second greatest cause of premature death and disability worldwide by the year 2020 (Murray, 1993). The suffering caused by depression is profound yet often underestimated. It can affect every aspect of a person's being: their feelings, thoughts and functioning. Postnatal depression is particularly important because it is so common and because it occurs at such a critical time in the lives of the mother, her baby and her family (Murray, 1996). For every 1,000 live births, 100-150 women will suffer a depressive illness and one or two women will develop a puerperal psychosis (O'Hara, 1996 and Kendell, 1987). Failure to treat either disorder may result in a prolonged, deleterious effect on the relationship between the mother and baby and on the child's psychological, social and educational development (Murray, 1997). Mental illness is also a significant factor in maternal mortality. The UK Confidential Enquiry into Maternal Deaths (CEMD) (Royal, 2001) reports that psychiatric disorders contributed to 12% of all maternal deaths. Suicide is the second leading cause of maternal death in the UK after cardiovascular disease. The report comments on the inaccurately low measurement of deaths from mental illness and demonstrates that record linkage reveals approximately as many deaths again by suicide or violent means. If included, these make deaths from mental illness the leading cause of maternal mortality. Untreated postnatal depression is associated with detrimental effects on infant development. The cognitive, emotional, social and behavioural development of the infant all may be affected both in the long and short term (Cooper, 1997 and Appleby, 1997). In our study Of 101 women, who had been delivered 2-8 weeks, were screened for postpartum depressive symptoms. 24 of them were had depressive symptoms and 77 were non depressed. Their age ranges from<18 to 45 years and parity ranges from 1 to 8, the subjects in the two groups were similar, also mode of delivery and place of delivery show no significant differences and this is similar to the results found by Adams, 2011 & EA Blom, PW Jansen 2010, PETER J Cooper 1997, D.Nielsen Forman 2000 (Blom, 2010; Adams, 2011 and PETER, 1997). This is shown in table (1)- Obstetrical factors: three variables show significant differences,presence of complications during pregnancy (70.83%,p<0.001), condition of the baby,postnatalstay. Complications during pregnancy (present or not) include pre- eclampsia, pregnancy induced hypertension, diabetes, suspicion of fetal distress show significant differences between the studied groups. Concerning the condition of the baby like premature infants, low birth weight, respiratory distress, neonatal jaundice and neonatal infections were found to have significant differences. Postnatal stay (>1 day, 2-5 days and more than 5 days) show significant differences, p>0.005. Other factors as puerperal complications including infections, UTI, others or absence of them show no significant differences between the studied groups. Breast feeding show no relation with the presence or absence of postpartum depressive symptoms. these results similar to the results of EA Blom, PW Jansen 2010,DTS Lee,2000,PETER J Cooper 1997, D.Nielsen Forman 2000, Grace G.Evins 2000 [3,42,45,] .these variables. Social factors: support at home, relation with husband show significant differences (p<0.001 for both), social income and nutrition were not significant,these results. History of psychological disease with positive family history show significant differences in Table (4), these results in Tables 3 & 4 are similar to the results of EABlom 2010, DT S Lee 2000, PETER J Cooper 1997, Nielsen 2000 (Blom, 2010; Lee, 2000; PETER, 1997; Grace, 2000). According to Table (5), although sex steroid hormones are obviously reduced during the postpartum period, especially progesterone and testosterone they are statistically not significant. Hormonal levels show no significant difference which is similar to what found by Chatzich.C, Rizos D; 2010, and Victoria Hendrick; 1998, PETER J Cooper 1997, D. Nielsen 2000.

Conclusion

Risk factors such as obstetrical factors (complications of pregnancy, condition of the baby post natal stay),social factors as support at home and relation with husband psychological factors were found in patients with high scores. Other factors as age, parity, mode of delivery, place of delivery, puerperal complications, social income, nutrition and reproductive hormonal levels were found not significant. Breast feeding has no relation with the development of postpartum depressive symptoms.

Recommendations

- There is a benefit from screening programmes for postnatal depression because postnatal depression is a hidden problem in our society.
- Screening tools have been devised to predict postnatal depression in the antenatal period. These have been based around known risk factors for postnatal depression, but many have not been properly evaluated to determine sensitivity, specificity and predictive value.
- Multiple screening (during pregnancy, early puerperium, late puerperium, after 6 months) is advised to reduce the occurance of postnatal depression.

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