

BURDEN OF DISEASE AND FACTORS ASSOCIATED WITH NAUSEA AND VOMITING IN PREGNANCY AMONG CURRENTLY PREGNANT MOTHERS IN ANURADHAPURA

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Key words: Nausea and vomiting in pregnancy, Productivity loss, Disease burden

INTRODUCTION

Nausea and vomiting in pregnancy (NVP) is one of the most common conditions affecting pregnant women during early pregnancy. It has been traditionally considered as a "minor ailment" of pregnancy. Even in medical community NVP is considered mostly as a physiological change and agreed upon management guidelines are not available for practice. Despite being a common condition, data on disease burden estimates of NVP is lacking. Effect of day to day life of pregnant women and resulting loss of productivity due to NVP has not been studied in Sri Lankan setting. The purpose of the present study was to determine the disease burden of NVP and its effect on day to day life of pregnant women in Anuradhapura district.

METHODOLOGY

A community based descriptive cross sectional study was carried out in four Medical Officer of Health areas in Anuradhapura district. These four areas were selected purposefully to represent geographical areas in Anuradhapura. A two stage cluster sampling technique was used to recruit currently pregnant mothers to the study. Field public health midwives invited pregnant women in the gestational age of 24-32 weeks and residing in Anuradhapura to participate in this study. Study was carried out as a part of a larger study on maternal morbidity and economic impact. Trained interviewers collected data using a validated, fully structured questionnaire. Severity and effect of NVP on day to

day work was assessed using a visual analog scale. Productivity losses were evaluated using the previously validated Impact tool kit developed by University of Aberdeen, translated and culturally adapted by Maternal Morbidity Project of the department of Community Medicine, Faculty of Medicine and Allied Health Sciences, Rajarata University of Sri Lanka. For this study productivity loss was calculated as some of days lost due to both absenteeism and presenteeism. Based on the visual analog scale representing the severity of disease and duration of its effect, number of days lost due to NVP was calculated using previously validated formula.

RESULTS AND DISCUSSION

Altogether 466 pregnant mothers participated in this study. Mean age of the pregnant mothers participated was 27 years (SD 5.5years). Median gestational age was 30 weeks (IQR 28-31 weeks). Of the 466 pregnant mothers, 191(41%) were primiparouse mothers. Sinhalese mothers accounted for 93.8 %(n=437) of the study sample.

Excessive nausea and vomiting during pregnancy was reported by 330 (70.8%) of the sample. Impact of NVP on day to day activities of pregnant women is showed in Table 1.

Table 1: Impact of NVP on pregnant woman's daily activities

| Severity | n | % |
|----------------------|-----|------|
| Total incapacitation | 29 | 6.2 |
| Severe (not total) | 62 | 13.3 |
| Moderate | 99 | 21.2 |
| Mild | 96 | 20.6 |
| None | 44 | 9.4 |
| Total | 330 | 70.8 |

Medical care was sought by 106 (22, 7%) pregnant women. Total number of treatment seekings was 235. Forty seven (10.3%) pregnant women in this study sample were admitted to hospital due to NVP. Total number of admissions was 95. Total number of days spent at hospital by these 47 pregnant mothers was 231, with an average of 4.9 days. Loss of productive days due to absenteeism (excluding the days spent in hospital) related to NVP in this study sample was 2577.

Factors associated with nausea and vomiting was evaluated using non-parametric tests. Factors assessed were, age, parity, social class, income,

education, employment and family support. None of these socio-demographic factors showed statistically significant association. Selected co-morbidities studied in the same sample were also assessed to describe probable correlation of multiple illnesses in pregnancy.

Table 2: History of severe nausea and vomiting and maternal morbidities

| | n | % | n | % |
|---|-----|------|-----|------|
| Hemoglobin (Hb) | | | | |
| <10mg/dL(Moderate to severe anemia) | 5 | 38.5 | 8 | 61.5 |
| 10-10.9 mg/dL (Mild anemia) | 57 | 73.1 | 21 | 26.9 |
| >10.9 g/dL (Non-anemic) | 254 | 70.6 | 106 | 29.4 |
| Gestational diabetes (OGTT test) | | | | |
| Positive | 22 | 59.5 | 15 | 40.5 |
| Negative | 266 | 69.8 | 115 | 30.2 |

OGTT- Oral Glucose Tolerance Test

Hb and OBTT tests were performed at the time of data collection. HB and OGTT results were available for only 451 and 418 pregnant mothers respectively

Both moderate to severe anemic and pregnant mothers with gestational diabetic reported lower percentage of severe nausea and vomiting. The difference between proportion was statistically significant for anemia, where moderate to severe anemia was negatively associated with severe nausea and vomiting (chi-square-6.58, p=.037)

This study shows the heavy burden of NVP that affects day to day life of pregnant women, which generally considered as a part of pregnancy and lacks attention from health providers. Based on the Impact productivity cost estimates of days lost due to absenteeism and presenteeism in Sri Lanka (manuscript under review), the total estimated days lost due to NVP in this sample is around 5960. In our sample, hospitalized days were accounted only for 3.9% of total days of productivity loss, showing the gross underestimation of burden of disease that could occur in hospital based studies. Previous studies done in other countries also showed that NVP causes significant burden to day to day activities (Attard et al. 2002), economic impact (Piwko et al. 2005, Piwko et al. 2007) and psycho-social consequences (O'Brien and Naber 1992, Swallow et al. 2004). Despite having evidence of major burden, no consensus has been achieved yet on management of NVP. A recently conducted Cochrane review

also concluded that there is lack of high quality evidence on effective management of nausea and vomiting in pregnancy (Matthews et al.). Public health approaches are none existing to minimize the burden of this condition. This condition affect primarily the poor households in which the productivity function of households are dependent on all family members. In these families coping mechanisms for loss of productivity of pregnant women is often done by reallocation of labour within family members. This affects the household productivity function and has a major impact on families, societies and country's economy. The observation made on the negative association between anemia and NVP needs further investigation.

CONCLUSION

Nausea and vomiting in pregnancy poses a major challenge during the pregnancy causing a significant loss of productivity. More evidence needed to launch public health programmes to reduce the heavy burden of this neglected condition.

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