

Leg Oedema During Pregnancy Among Nigerian Igbo Women: Perceptions, Prevalence, Prognosis And Treatment-Seeking Behaviours

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Citation

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Abstract

In order to determine the perceptions, prevalence and prognosis of leg oedema during pregnancy as well as the treatment-seeking behaviour for the condition among Nigerian Igbo women, we conducted a point prevalence survey of 1000 consecutive pregnant Igbo women over a 10-month period. The age of respondents ranged from 17 years to 45 years with a mean of 28 years. The overall prevalence rate of leg oedema during pregnancy was 8.5%. The earliest gestational age at which it first appeared during pregnancy was 24 weeks, and 100% of cases disappeared within one week of delivery. Anaemia, malnutrition, excessive body water, kidney diseases, liver diseases and hypertension/preeclampsia were the presumed causes of leg oedema during pregnancy. 73% of those who have had the condition had sought treatment for it outside the hospital. The low prevalence rate of this condition as well as its presumed association with ill-health could explain why the few women who develop the condition consider it abnormal. Its excellent prognosis supports reassurance as adequate management for the condition. Reassurance should, however be preceded by adequate counselling to dissuade the women from receiving potentially harmful medications for this condition.

SUMMARY

In order to determine the perceptions, prevalence and prognosis of leg oedema during pregnancy as well as the treatment-seeking behaviour for the condition among Nigerian Igbo women, we conducted a point prevalence survey of 1000 consecutive pregnant Igbo women over a 10-month period.

The age of respondents ranged from 17 years to 45 years with a mean of 28 years. The overall prevalence rate of leg oedema during pregnancy was 8.5%. The earliest gestational age at which it first appeared during pregnancy was 24 weeks, and 100% of cases disappeared within one week of delivery. Anaemia, malnutrition, excessive body water, kidney diseases, liver diseases and hypertension/preeclampsia were the presumed causes of leg oedema during pregnancy. 73% of those who have had the condition had sought treatment for it outside the hospital.

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INTRODUCTION

Human pregnancy is associated with changes in most of the physiological systems of the body as a result of the increased functional demands to cope with the additional requirements of pregnancy, delivery and lactation^{1,2}. In the absence of associated functional impairments, these changes are regarded as normal².

Many of the pregnancy-induced changes manifest on the skin with well recognized signs^{1,3}. Leg oedema is one of the cutaneous manifestations of pregnancy^{1,4,5,6}. Oedema is also a common sign of many pathological conditions such as cardiovascular, renal, haematological and nutritional disorders, among others^{7,8,9}. In the absence of these disorders, pregnancy-induced leg oedema is associated with favourable pregnancy outcomes^{10,11,12,13,14}, and is functionally regarded as normal^{4,10}. Its aesthetic status as normal or abnormal is defined by the personal and

community perception of the condition^{15, 16, 17}. These perceptions are usually informed by the prevalence and prognosis of the condition, being regarded as normal if the prevalence is high and the prognosis good^{16, 17}. With a prevalence of 75 to 80%^{7, 18} and complete resolution after delivery among the Caucasians^{7, 19, 20}, leg oedema during pregnancy is regarded as normal in the Caucasian population in the absence of identifiable diseases.

Among the predominantly Igbo population of Enugu, South Eastern Nigeria, leg oedema is generally associated with diseases which have poor prognosis such as liver and renal diseases or with very poor nutrition and anaemia. Women who develop leg oedema during pregnancy therefore consider the condition abnormal and seek treatment for it²¹. The concern expressed by pregnant women who develop leg oedema could suggest a low prevalence of this condition amongst this population or its poor prognosis or both. For instance if only one out of ten pregnant women develops leg oedema, she would be justified to consider herself abnormal but if eight out of every ten pregnant women develop leg oedema, they are more likely to consider leg oedema a normal feature of pregnancy. Also if women who had pregnancy-related leg oedema in previous pregnancies could associate the condition with specific adverse pregnancy events, the worry about leg oedema during pregnancy would be better appreciated.

Although a number a number of physical and pharmacological measures have been tried to relieve leg oedema during pregnancy²², none has been consistently found to confer benefits superior to non-treatment²³, and some are potentially harmful^{11, 12}.

The objectives of the study were to determine the perception, prevalence and prognosis of leg oedema during pregnancy among the Igbo women of South Eastern Nigeria as well as their treating seeking behaviours for the condition.

MATERIALS AND METHODS

The study was a cross-sectional point prevalence survey involving 1000 consecutive eligible pregnant Igbo women who presented at the antenatal clinic of the Park Lane Specialist Hospital Enugu over a 10-month period. The Park Lane hospital is the only state-owned health care facility that offers general and specialist obstetric services in Enugu capital city. The maternity unit has 4 Obstetrician/Gynaecologist, 7 other doctors (residents and general duty doctors) and 23 nurse/midwives. Its annual

deliveries range from 3,000 to 4, 000. The hospital offers services comparable in quality to those offered at the University of Nigeria Teaching Hospital (which is also located just outside Enugu) but at a much lower cost. As a result, women of different socio-economic backgrounds access maternity services at the Park lane hospital. The eligible study subjects were pregnant Igbo women. Those excluded were sick women, those who were not of Igbo ethnicity, those who declined consent, and those with the following conditions that are usually associated with pathological leg oedema: preeclampsia, hypertension, severe anaemia, malnutrition, renal diseases, liver diseases and other cardiovascular diseases. Data were collected using structured, pre-tested, researcher-administered questionnaire pro-forma. Following consent, blood pressure was measured and the results of urinalysis were documented, and a brief history was taken to determine the subject's eligibility for the study (by eliminating the exclusion conditions). Verbal consent was considered adequate. In eligible subjects, relevant socio-demographic data (age, parity, education and occupation) were obtained and documented. Full clinical examination of the antenatal client^{19, 24} was conducted, including checking for leg oedema and weight. The questionnaire contained questions on the respondents' perceptions about leg oedema during pregnancy (as normal or abnormal) and what they believed were the causes of leg oedema during pregnancy. Those who had leg oedema were further asked whether they sought treatment for the condition and if yes, the source of treatment (from hospital or outside the hospital) and type of treatment (reassurance alone, reassurance and drugs or drugs alone). They were also asked the gestational age in the index pregnancy at which leg oedema first appeared.

Determination of the prognosis of leg oedema during pregnancy was based on the information provided by the respondents who had the condition in their previous pregnancies. They were asked whether leg oedema occurred in a previous pregnancy, and if yes, whether there were adverse pregnancy events or adverse pregnancy outcomes associated with leg oedema as well as how long after delivery the leg oedema disappeared.

The data were collated and analyzed with the computer statistical software SPSS version 15 for descriptive and inferential statistics. Level of significance was set at $p < 0.05$ (95% confidence interval). The research ethics committee of the University of Nigeria Teaching Hospital Enugu granted

the ethical clearance for this study.

RESULTS

The age of participants ranged from 17 to 45 years with a mean of 28 years. The overall prevalence of leg oedema during pregnancy was 8.5%. The earliest gestational age at which leg oedema during pregnancy first appeared was 24 weeks. Among those who had it in a previous pregnancy, it disappeared in 100% of cases within one week of delivery. Although 380 out of the 666 women in their second or higher order pregnancies (representing 57.1% of that population) had had leg oedema during one or more previous pregnancies, none of them remembered any specific adverse pregnancy event or outcome that resulted from the oedema. All the women (100%) however believed that leg oedema during pregnancy is abnormal and requires treatment. All the 85 respondents (100%) of those who had leg oedema were offered only reassurance without drug in the hospital. However, 62(73%) of those who had leg oedema admitted receiving some forms of drug treatment for the condition outside the hospital setting. On what they believed to be the causes of leg oedema during pregnancy, the majority (75.8%) believed it was caused by anaemia and only 1.3% associated it with hypertension and preeclampsia. Their other presumed causes of leg oedema during pregnancy are shown in Table 1. There was no significant association between the development of leg oedema during pregnancy and maternal age, parity, education, occupation or weight ($p > 0.05$).

Figure 1

Table 1: Presumed causes of leg oedema during pregnancy among Nigerian Igbo women

Causes of leg oedema during pregnancy	Number of respondents	% of respondents
Anaemia	758	75.8
Malnutrition	702	70.2
Too much water in the body	518	51.8
Kidney disease	433	43.3
Liver diseases	219	21.9
Hypertension and preeclampsia	13	1.3

DISCUSSIONS AND RECOMMENDATIONS

The observed prevalence rate of 8.5% is much lower than the Caucasian rate of 75% to 80%^{7, 18}. This low prevalence rate could mean one or both of two things. First, it could represent a true lower prevalence rate in the study

population. But it could also result from the study design. In a condition such as leg oedema during pregnancy that is transient, (appears and disappears again), a point prevalence survey captures only those who have it at the particular point of survey. Those who had the condition before but not at the point of survey, as well as those who will develop it after the point of survey, are not captured by the survey. A longitudinal survey on the other hand, captures all those who develop the condition from the beginning to the end of their pregnancies. The latter design will record a higher rate. It is noteworthy that 57.1% of respondents in their second or higher order pregnancies admitted having leg oedema during one or more previous pregnancies, suggesting that the study design might account for the much lower prevalence rate recorded in this study. Previous studies did not specify the method of survey used.

The low point prevalence rate of pregnancy-related leg oedema in this population might contribute to why the few women who have the condition at every point considered it abnormal enough to seek treatment²¹. But the major cause for their worry is probably the association of oedema with serious ill health and malnutrition.

The favourable prognosis observed in this study is in agreement with the Caucasian studies^{6, 4}, and suggests that reassurance is a reasonable management for the condition. Such reassurance should take cognizance of the prevailing belief in this population namely that leg oedema, even during pregnancy, is a sign of some serious ill health or malnutrition. Therefore a pregnant woman with leg oedema should be offered adequate counselling during which the woman's understanding of leg oedema, concerns about the condition and expectations are explored and understood. This should be followed with provision of relevant information on the pathogenesis of leg oedema during pregnancy, correction of wrong perceptions and finally, reassurance. It is only when the women are convinced, not merely told, that leg oedema during pregnancy is normal, that they will stop receiving potentially harmful treatments for the condition outside the hospital setting.

It is concluded that despite a low prevalence and good prognosis of leg oedema during pregnancy, the Nigerian Igbo women consider the condition abnormal and seek treatment for it. It is recommended that pregnant Igbo women with leg oedema be adequately counselled to dissuade them from receiving potentially harmful treatment for the condition. A study on what constitutes the drug

treatment offered pregnant women with leg oedema outside the hospital setting is recommended. A follow-up longitudinal study of pregnant women throughout pregnancy, would determine the true risk of this condition during pregnancy. Such a study is recommended as a follow up to this point prevalence survey.

References

1. Schmutz J.L. Physiological Changes during Pregnancy. *Presse Med.* 2003; 32 (38): 1806-1808.
2. Dunlop W. Normal Pregnancy. In: Edmonds D.K (Ed) *Dewhurst's Textbook of Obstetrics and Gynecology for Postgraduates*. 6th edition, Osney Mead, Oxford. Blackwell Science 1999. pp 76-90.
3. Nasemann T, Sauerbrey W, Burgdorf WHC. *Fundamentals of Dermatology*. New York, Springer Verlag. 1983. pp 1-15.
4. Davison JM. Edema in pregnancy. *Kidney Int Suppl.* 1997; 59: 590-596
5. Davison JM, Lindheimer MD. Volume homeostasis and osmoregulation in human pregnancy. *Baillieres Clin Endocrinol Metab.* 1989; 3(2): 451-472
6. Mohaupt MG. Edema in pregnancy--- trivial? *Ther Umsch.* 2004, 61(11): 687-690
7. Davey DA, Hypertensive Disorders in Pregnancy. In: Whitfield CR (Ed) *Dewhurst's Textbook of Obstetrics and Gynecology for Postgraduates*. 4th edition. Osney Mead, Oxford. Blackwell Science 1990. Pp 200-241,
8. Robson C.C. Hypertension and renal diseases in pregnancy. In: Edmonds D.K. (Ed). *Dewhurst's Textbook of Obstetrics and Gynaecology for Postgraduates*. 16th edition. Osney Mead. Oxford. Blackwell Science. 1999. pp 166-185.
9. Abudu OO. Anaemia in Pregnancy. In: Agboola AA (Ed) *Textbook of Obstetrics and Gynaecology for medical students*. Vol. II. Lagos, University Services Education Publishers. Limited 1988. Pp 72-84.
10. Butte NF, Ellis KJ, Wong WW, Hopkinson JM, Smith EO. Composition of gestational weight gain impacts maternal fat retention and infant birth weight. *Am J Obstet Gynecol.* 2003; 189 (5): 1423-1432
11. Campbell DM, MacGillivray I. The effect of low calorie diet or a thiazide diuretic on the incidence of preeclampsia and on birth weight. *Br J Obstet Gynaecol.* 1975; 82(7): 572-577
12. MacGillivray I, Campbell DM. The relevance of Hypertension and Oedema i pregnancy. *Clin Exp Hypertens.* 1980; 2(5): 897-914
13. Thomson AM, Hytten FE, Billewicz WZ. Oedema in Pregnancy. *J. Obstet Gynaec Brit Cwlth.* 1967. 74: 1-4
14. Robertson EG. Prevalence of Oedema in Pregnancy. *J. Obstet Gynaec. Brit Cwlth.* 1971, 78: 520-3.
15. Kennedy I. *The Unmasking of Medicine*. London. Allen and Unwin. 1981, Pp 84-97.
16. Jones K, Moon G. *Health, Disease and Society: a critical medical geography* London. Routledge and Kegan, 1987. Pp 37-42.
17. Boulding K. The concept of need for health services. *MultiBank Memorial Fund Quarterly* 1996. 44: 4-6.
18. Wynn RM. *Obstetrics and Gynaecology: The Clinical Core: 5th edition*. Philadelphia. Lea and Fabiger. 1992. Pp 152-160.
19. Lewis TLT, Chamberlain GVP. *Obstetrics by Ten Teachers*, 5th edition, London, Edward Arnold, 1990, pp 33-62.
20. Moore TR. Maternal Adaptation to Pregnancy. In: Moore TR, Reiter RC, Rebar RW, Baker VV (Eds) *Gynecology and Obstetrics: A Longitudinal Approach*. New York, Churchill Livingstone, 1993. pp 48-61.
21. Nkwo OP. Pregnancy-related cutaneous changes among the Igbo women of Eastern Nigeria: Prevalence and Prognosis. Abia State University. M.Sc Dissertation in Human Anatomy. 2006.
22. Bamigboye AA, Hofmeyr GJ. Interventions for leg edema and varicosities in pregnancy. What evidence? *Eur J Obstet Gynaecol Reprod Biol.* 2006; 129(1):3-8
23. Joung GL, Jewell D. Interventions for varicosities and leg oedema in pregnancy. *Cochrane Database Syst Rev.* 2007; (1) CD001066
24. Garry MM, Govan ADT, Hodge C, Callander R. *Obstetrics, illustrated*. 2nd edition. London. Churchill Livingstone. 1974. Pp 86-120

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