



FIG .1. Herpes Gestationis

Pruritus In Pregnancy

Nuha T. Kusaimi

Background:

P ruritus during pregnancy is a common complaint. It may cause a great discomfort and worry for the patient and her relatives about its etiology and its treatment that may affect the baby. A rash during pregnancy may be the result of (a) preexisting skin disease, (b) coincidentally acquired skin disease or (c) a dermatosis specifically related to pregnancy.

Objectives:

1. To study those common conditions affecting the

pregnant women carefully, so that we may improve our knowledge regarding their etiology, and classification.

2. Twenty percent of the pregnant women complain of pruritus during pregnancy with variable intensity. The itching does not disappear in most of them after systemic administration of antihistamines, and local conventional therapy. We hoped to find a better drug to help those patients, and make them feel comfortable. Beside that, no antihistamine administered systemically should be deemed safe in the first trimester of pregnancy.

Methods:

Forty-two pregnant women who complained of itching were studied. Twenty-six of them had itching related to pregnancy (group I). The other sixteen cases (group II) had itching due to a pre-existing or coincidentally acquired skin disease. Twenty healthy pregnant women were studied as controls. Detailed history, careful examination and laboratory investigations, including serum cholesterol level were done for every case included in this study. Cholestyramine was used in a dose of 4 gm daily given in two divided doses and taken orally with juice or milk.

Results:

Serum cholesterol level was 236.58±39.30 mg in-group I, 196.94±31.63 mg in-group II, and 188.30±33.03 mg in the controls. Serum cholesterol level was significantly higher in group I compared to controls $p < 0.0001$.

Follow-up of the patients regarding the itching and the skin eruption showed that the administration of cholestyramine powder orally when the serum cholesterol level is higher than normal was very effective to stop the itching and improve the skin lesions in most of the patients in group I (79.9%) and in 12.2% of group II cases. The statistical difference of the 2 groups was found to be highly significant $\chi^2 = 16.521$, $p < 0.0001$.

Conclusion:

These findings support the hypothesis that when the itching is related to pregnancy, it may be due to transient and recurrent cholestasis. Administration of cholestyramine powder orally results in lowering the cholesterol level and better handling of bile acids, which lead to improvement of the itching. Our findings also show that histamine may not be of importance in the pathogenesis of pruritus in dermatoses specific to pregnancy.

Pregnancy is associated with profound physiological endocrine upheavals and consequent cutaneous changes⁽¹⁾. Itching in pregnancy is a common condition of uncertain etiology, and it is not certain whether it is a specific dermatosis or it is an extension of the physiological changes occurring during pregnancy^(2,3). As many as twenty percent of pregnant women experienced some itches⁽⁴⁾. In most, this can be

attributed to some identifiable skin disorder such as scabies, eczema, urticaria, a drug eruption or one of the specific, pregnancy-related inflammatory dermatoses. Pruritus gravidarum is a term applied to those patients who experience intense pruritus without evident primary cutaneous change. The itching usually begins in the third trimester and is often localized to the abdomen⁽⁵⁾, although it may also be very widespread. It is generally considered that pruritus gravidarum is a mild variant of recurrent cholestasis of pregnancy, and occurs in 0.02-2.4% of pregnancies⁽⁶⁾. The itching usually subsides rapidly after childbirth, but may persist for some weeks into the puerperium. It may also recur with subsequent pregnancies. Recurrent attacks increase the liability to cholelithiasis⁽⁵⁾. Liver-function tests are occasionally abnormal, with a raised serum alkaline phosphatase⁽²⁾. It is probable that the irritation results from abnormal hepatic excretion of bile acids induced by endogenous oestrogen and progesterone, both of which have been shown to affect the handling of bile acids^(7,8).

Patients and Methods:

Forty-two pregnant women were seen at the skin outpatient clinic of the Mosul Teaching Hospital, over a period of ten months, from Jan/2001 to Oct/2001. Their mean age was 27.69 years ± 6.22. Twenty-six pregnant women (group I) complained of itching related to their pregnancy, their mean age was 27.58 years ± 7.02. Sixteen pregnant women (group II) complained of itching due to a pre-existing or coincidentally acquired

skin disease. Their mean age was 29.31 years ± 5.49. Twenty healthy pregnant women, who have no itching, were collected from the antenatal care clinic and studied as controls. Their mean age was 26.55 years ± 5.65.

Detailed history and careful clinical examination were done for every case included in this study. Routine laboratory investigations as Hb%, W.B.C. total and differential count, urine analysis, serum alkaline phosphates (SAP), SGPT, SGOT, total serum bilirubin and serum cholesterol levels were done for every case included in the study.

Different lines of treatment were used as emollient agents, calamine lotion, local steroids, systemic antihistamines, cholestyramine powder as four grams orally, and systemic steroids for the two groups.

Findings

Forty-two pregnant women complaining of itching were studied, in twenty-six of them the cause of itching was related to pregnancy (group I). Sixteen pregnant women complained of itching but the cause of itching was due to a pre-existing dermatoses or coincidental skin disease acquired during pregnancy (group II). The cases included cases of atopic dermatitis (5 cases), scabies (3 cases), chronic urticaria (2 cases), allergic contact dermatitis (2 cases), psoriasis (1 case), erythema nodosum (1 case) erythema multiforme (1 case) and one case of pityriasis rosea.

In group I cases, fourteen patients complained of severe itching which was of early onset. During examination, there were multiple erythematous papular

eruptions with excoriated papules over the extensor surfaces of the upper and lower extremities, abdomen and other parts of the body, with no urticarial lesions, the lesions persisted till the purperium. In most of these patients, the condition was recurrent in previous pregnancies. These patients were classified as prurigo gestationis.

Nine patients from group I have the criteria of pruritic urticarial papules and plaques of pregnancy (P.U.P.P). The patients had severe itching which was of late onset and persisted till the purpurium. It affected mainly primigravida and one of them had twin pregnancy.

Two patients of group I had itching which started early in pregnancy, during examination no skin lesion was found except for scratch marks, this was considered as pruritus gravidarum.

One patient had herpes gestationis (Pemphigoid gestationis) (figure.1) She was admitted to hospital, investigations were done including histopathology examination, and she delivered a boy in good general health but of low body weight. The baby developed skin rash that remained for few days, and disappeared spontaneously.

The type of the skin lesions in group I cases is shown in table 1.

Group II comprised sixteen patients as follow:

Five patients had atopic dermatitis

Three patients had scabies.

Two patients had chronic urticaria.

Two patients had allergic contact dermatitis.

One patient had psoriasis .

One patient had erythema

nodusum.

One patient had erythema multiforme.

One patient had pityriasis rosea.

The severity of itching was classified as mild, moderate, and severe. In group I all the patients complained of severe itching (100%), while in group II, one patient complained of mild itching (6.3%) and two complained of moderate itching (12.5%) and thirteen patients complained of severe itching (81.3%).

Relation of onset of pruritus to duration of gestation was analyzed. Pruritus started in 14.3% in the first trimester, 35.7% in the second trimester and 50% in the third trimester. Regarding the distribution of the skin lesions, the upper and the lower extremities were mainly affected. Tables 2 and 3 show the distribution of the lesions in the affected groups.

Table 4 shows the results of serum cholesterol level in the studied groups.

Follow up of the patients regarding the itching and the skin eruption showed that the administration of cholestyramine powder orally was very effective to stop the itching and improve the skin lesions in most of the patients in group I (79.9%). In group II when the itching is unrelated to pregnancy, the itching improved in 12.2% of the patients. The statistical differences of the two group was found to be highly significant $\chi^2=16.521$, $p<0.0001$.

Discussion and Comment

Herpes gestationis, pruritic urticarial papules and plaques of pregnancy, cholestasis of pregnancy and impetigo herpiformis are the main well-

defined specific dermatoses of pregnancy⁽⁹⁾. Itching is the most troublesome symptom that usually does not respond to regular conventional therapy of systemic antihistamines and local soothing measures.

In this work forty-two pregnant ladies complaining of itching were analyzed. The patients were divided into two groups: group I with dermatoses related to their pregnancy (26 cases) and group II with dermatoses not related to their pregnancy (16 cases). Cholestasis of pregnancy is an intensely pruritic condition that begins after the sixth week of pregnancy, progresses throughout the pregnancy, and subsides soon after delivery. The pruritus is generalized, and patients often presents with generalized excoriation⁽¹⁰⁾. There is a strong correlation of the degree of pruritus and the serum bile acid level that will range from 150-4000 $\mu\text{g}/100\text{ ml}$, instead of < 60 in the normal state. The degree of pruritus also correlates with the bile acid levels in the skin⁽¹¹⁾. Cholestyramine, an ion exchange resin, has the ability to normalize bile salt levels.

Cholestyramine powder given in 4 gm daily divided dose, was found effective against pruritus when the cholesterol level was higher than normal in dermatoses related to pregnancy, and not so effective in dermatoses not related to pregnancy. No side effect was seen, except one patient developed anorexia. The patient with herpes gestationis felt much better regarding the itching when systemic corticosteroids were combined with cholestyramine powder than with systemic antihistamine

Table (1): Shows Type of skin lesion in group I.

Type of Skin Lesion	No. of patients	%
Prurigo Gestationis	14	53.84
Pruritic urticarial Papules and plaques of Pregnancy	9	34.61
Pruritus gravidarum	2	7.69
Herpes (Pemphigoid) gestationis	1	3.84

Table (2): Site of the skin lesion in group I.

Site of Skin Lesion	No. of patients	%
Face	3	11.5
Scalp	5	19.2
Upper extremities	25	96.2
Lower extremities	23	88.5
Breast	11	42.3
Abdomen	19	73.1
Back	16	61.5

Table (3): Site of the skin lesion in group I &II.

Site of Skin Lesion	No. of patients	%
Face	7	16.7
Scalp	8	19.1
Upper extremities	38	90.5
Lower extremities	36	85.7
Breast	21	50.0
Abdomen	30	71.4
Back	25	59.5

Table (4): Serum cholesterol level in patients and control.

No. of patients	Mean± SD	Mode	T-test	P value
26 (Group I)	236.58±39.30	250	3.407	<0.002
16 (Group II)	196.94±31.63	180	0.794**	<0.432
42 (Total No. of patients)	221.48±41.08	180		
20 (Control)	188.30±33.03	200	4.420***	<0.0001
62 (Total)	210.77±41.45	180		
*group I and II	**group II and control		***group I and control	

F- test Between 3 groups (group I,II and control) = 12.092→ p<0.0001.

References

1. Graham-Brown RAC, The ages of man and their dermatoses. In Rook/Wilkinson/Ebling textbook of dermatology- 6th ed./ edited by R.H.Champion, J.L.Burton, D.A.Burns and S.M.Breathnach, 1998; pp 3259, 3273.
2. Black MM, Mayou SC. Skin diseases in pregnancy. In: de Swiet M, ed. Medical Disorder in Obstetric Practice, 2nd ed. Oxford: Blackwell Scientific Publications, 1989: 808.
3. Winton GB, Lewis CW. Dermatoses of pregnancy. J Am Acad Dermatol, 1982; 6:977.
4. Furhoff WR. Itching in pregnancy. A 15-year follow-up study. ActaMedScand, 1974; 196: 403.
5. Anonymus. Itching in pregnancy. Br med J, 1975;3:608.
6. Alcalay J, Wolf JE. Pruritic urticarial papules and plaques of pregnancy: the engima and the confusion. J Am Acad Dermatol, 1988; 19: 1115.
7. Holzbach RT. Jaundice in pregnancy. Am J Med, 1976; 61:367
8. Sasseville D, Wilkinson RD, Schnader JY. Dermatoses of pregnancy. Int J Dermatol 1981; 20:223
9. Vaughn Jones SA, Black MM. Pregnancy dermatoses. J Am Acad Dermatol 1999, 40; 233
10. McDonald JA. Cholestasis of pregnancy. J Gastroenterol Hepatol 1999; 14:515
11. Shaw D, Frohlich J, Wittmann BAK, et al. A prospective study of 18 patients with cholestasis of pregnancy. Am J Obstet Gynecol 1982; 142: 621.