Causes and Treatment Modalities of Pruritis in Pregnancy

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Objectives of Study: To assess the frequency, causes and treatment modalities used for the management of pruritis in pregnancy. **Study Design:** Cross-sectional, observational study **Study Setting:** Department of Obstetrics & Gynaecology, Allama Iqbal Medical College and Jinnah Hospital, Lahore **Study Period:** One month, January 2004 **Patients and methods:** 75 pregnant women with pruritis were screened from a total of 826 pregnant women fulfilling the inclusion criteria of pruritis during pregnancy and interviewed through a structured questionnaire for their pruritis. The cases were diagnosed on the basis of clinical criteria. The data was tabulated, analyzed through SPSS ver11.0 to determine the frequency, causes and treatment modalities of pruritis among pregnant women presenting to OPD clinic. **Results:** A total of 826 ladies presented in OPD and antenatal wards during the study period. Seventy-five women gave history of pruritis in pregnancy hence the frequency of generalized pruritus in pregnant ladies was 9.07%. No cause was found in 59 patients. 5 ladies had fungal infection, 4 had scabies, and 2 had photo-dermatosis. One each had PUPPP, pruritis gravidarum, psoriasis, xerosis and eczema. Chi-square was statistically significant for skin conditions present in patients with pruritis at ($P<0.05$). Chi-square showed significant association of presence of allergies in patients of pruritis ($P < 0.05$). It was also observed that there was no significant association between skin conditions and type of skin disorders. **Conclusions:** Pruritis is a common problem in pregnancy. Most of the causes are benign and innocuous. Specific dermatological disorders even though uncommon must be kept in mind before prescribing commonly used drugs.
Key words: Pruritis, Itching, Pregnancy

Cutaneous changes and eruptions during pregnancy are exceedingly common and in some cases a cause for substantial anxiety on the part of a prospective mother. These alterations may range from innocuous changes that occur in almost all pregnant women, to skin diseases that are unrelated to pregnancy. Some eruptions, however, are specific to pregnancy. The concerns of the patient range from cosmetic appearance, to the chance of recurrence of the particular problem in a subsequent pregnancy, to its potential effects on the fetus in terms of morbidity and mortality[1].

The word pruritis comes from the Latin word – prurire–meaning "to itch". It is by definition an unpleasant cutaneous sensation provoking scratching. Pruritis varies in severity and may be troublesome enough to interfere with daytime concentration and nighttime sleep. Despondency over its severity and chronicity may even lead to suicide[2]. The origin of itch is within the skin free nerve endings & fibres that are most concentrated in wrists & ankles. Scratching is a spinal reflex response, which ascends to cerebral cortex via spinothalamic tract. The chemical mediators involved are the substance P,opiod & non-opiod peptides, somatostatins, neurokinin A, histamine, serotonin and prostaglandins. The external mediators are inflammation of skin, environmental heat or dryness, vasodilatation or psychological concerns[3].

Dermatological conditions that cause pruritis include xerosis or dry skin, atopic dermatitis, sunburn, psoriasis & local infections like scabies & pediculosis corporis (lice). Systemic causes include iron deficiency anemia, severe chronic renal failure (uremic pruritis), neuro-dermatitis or delusions of parasitosis and polycythemia rubra vera. Hodgkin's lymphoma, malignant carcinoid, anorexia nervosa, hyperthyroidism, urticaria and cholestasis are other uncommon but important causes[4].

Environmental or exposure related causes are; aquagenic pruritis (intense distressing itch after water contact), cholinergic urticaria and swimmer's itch. Drugs which can cause pruritis are itraconazole, fluconazole, ketoconazole, niacinamide, B-vitamins, aspirin, quinidines, ointments with high concentrations of inert oil, narcotics (especially via spinal administration)& hypersensitivity reactions to rifampicin & vancomycin. Allergen or irritant exposure (e.g, contact dermatitis) can be due to; heat exposure: miliaria rubra (prickly heat), fibreglass exposure (fiberglass dermatitis)& cat exposure.

Pruritis or itching during pregnancy is a common sumptom.15% of women complain of pruritis during pregnancy[5]. The specific dermatoses of pregnancy are; pruritic urticarial papules and plaques of pregnancy (PUPPP), herpes gestationis, prurigo of pregnancy, pruritic folliculitis of pregnancy, and impetigo herpetiformis[6]. Intrahepatic cholestasis of pregnancy (obstetric cholestasis) or pruritis gravidarum is amongst the common causes of pruritis during pregnancy.

Persistent scratching can result in various complications like bacterial super-infection or licken simplex chronicus i.e., thickened skin in response to repeated scratching. Pregnant women feel extremely distressed due to itching as sometimes they are unable to scratch at areas with difficult accessibility like back, vulva and inner thighs. Repeated itching may cause embarrassment in social gatherings, resulting in isolation and confinement to home. This forced isolation may lead to mood changes and morbid depression.

Patients and methods:
The study is a cross-sectional and descriptive study and was carried out in the Department of Obstetrics & Gynecology, Allama Iqbal Medical College and Jinnah Hospital, Lahore. All patients presenting in antenatal OPD and Labor ward were included in the study. The study was conducted during the month of January 2004.

We set up a specialist clinic in OPD for pregnant women presenting with complaint of pruritus, both to improve the management of pregnant women with skin problems and to enhance our general understanding of the pruritus of pregnancy. Eight hundred and twenty six pregnant women attending obstetrics OPD were screened for the presence of pruritus. This clinic has provided a database of 75 pregnant women complaining of pruritus as primary symptoms. In each case the dermatological diagnosis was clearly defined on clinical criteria. We also included a number of patients who presented with relatively trivial diagnoses, as this reflects the referral patterns of our midwives, general practitioners and obstetricians within our hospital and local population This study was designed to assess the frequency, causes and treatment modalities used for the management of pruritis in pregnancy. The data was entered and tabulated in 'SPSS ver11.0' rates and ratios were calculated and Chi-square test was used for the statistical significance of different variables under study.

Inclusion Criteria: All pregnant ladies presenting with complaints of generalized pruritus at antenatal OPD & labour ward of Jinnah Hospital.

Exclusion Criteria:

- Pruritus present before pregnancy.
- Patient taking medicine for their preexisting skin disorders before pregnancy.
- Failure to provide consent.

Ethical Clearance and informed consent: The study had an Ethical Clearance before commencement. The committee was of the opinion that the activities to be carried out under the proposal will not in any way cause mental or physical harm to individuals or communities involved in the study and informed consent from the individual respondent was also obtained.

Results:
A total of 826 ladies presented in OPD and antenatal wards during the study period. Seventy-five women gave history of pruritis in pregnancy hence the frequency of generalized pruritus in pregnant ladies was 9.07%. No cause was found in 59 patients. 5 ladies had fungal infection, 4 had scabies, and 2 had photo-dermatosis. One each had PUPPP, pruritis gravidarum, psoriasis, xerosis and eczema.

Chi-square was statistically significant for skin conditions present in patients with pruritis at ($P<0.05$) (Table II). Chi-square showed significant association of presence of allergies in patients of pruritis ($P < 0.05$) (Table III, IV). It was also observed that there was no significant association between skin conditions and type of skin disorders (Table V). The treatment modalities used by our patients are mentioned in Table VI.

Table I. symptoms and Signs Associated with Pruritus

Symptoms	Yes		No	
	No.	%age	No.	%age
Itching	75	100	0	0.0
Anorexia	4	5.3	71	94.7
Insomnia	23	30.7	52	69.3
Signs				
Rash	36	48.0	39	52.0
Papule	9	12.0	66	88.0
Elevated Hive	8	10.7	67	89.3
Pimple	4	5.3	71	94.7
Plaque	3	4.0	72	96
Pustule	3	4.0	72	96
Vesicle	3	4.0	72	96
Blisters	3	4.0	72	96

Table: II Skin Conditions (n=75)

Skin conditions	Frequency	%age
Normal Skin	24	32.0
Rashes, elevated hive, pimple, papule, pustule	43	57.3
Rash, Plaque & vesicle / blisters	8	10.7

Chi-Square: Skin conditions (n=75)

	Observed N	Expected N	Residual
Normal Skin	24	25.0	-1.0
Rashes, elevated hive, pimple, papule, pustule	43	25.0	18.0
Rash, Plaque & vesicle/ blisters	8	25.0	-17.0

Test Statistics

	Skin condition
Chi-Square	24.560
Df	2
Asymp. Sig.	.000

a 0 cells (.0%) have expected frequencies less than 5.
The minimum expected cell frequency is 25.0.

Table III Classification of pruritis (n=75)

Diagnosis	Frequency	%age
Non Specific	44	58.7
Dermatosis of Pregnancy	2	2.7
Infectious Diseases (scabies, Fungal infection)	7	9.3
Allergies (food, eviornment, drugs, disorders)	17	22.7
Erytheromatous scaly eruptions (psoriasis, Eczema)	2	2.7
Photodermatosis	2	2.7
Pigment disorders	1	1.3

Test Statistics

	Diagnosis
Chi-Square	348.720
Df	8
Asymp. Sig.	.000

a 0 cells (.0%) have expected frequencies less than 5.

The minimum expected cell frequency is 8.3. Chi Square shows significant association of presence of allergies in patient of pruritus. (P< .05)

Table: IV Type of Allergies in respondents (n=75)

Type of allergy	Frequency	%age
No Allergy	58	77.3
Drug Allergies	4	5.3
Dust	3	4.0
Woolen	1	1.3
Fish	4	5.3
Egg	1	1.3
Cold	1	1.3
Asthma	2	2.7
Smoke	1	1.3

Test Statistics

	Allergies
Chi-Square	334.560
Df	8
Asymp. Sig.	.000

a 0 cells (.0%) have expected frequencies less than 5.
The minimum expected cell frequency is 8.3.

Chi Square shows significant association of presence of allergies in patient of pruritus. (P< .05)

Table V Classification of pruritus Skin condition Cross tabulation

Classification of Pruritus	Skin condition						Total	
	Normal Skin		Rashes, Elevated hive, Pimple, papule, Pustule		Rash, Plaque & vesicle/ blisters			
	No	%	No	%	No	%	No	%
Non Specific	18	24.0	23	30.7	3	4.0	44	58.7
Dermatosis of Pregnancy	-	0.0	2	2.7	-	0.0	2	2.7
Infectious Diseases (Scabies, Fungal infection)	-	0.0	5	6.7	2	2.7	7	9.3
Allergies (food, eviornment, drugs, disorders)	6	8.0	9	12.0	2	2.7	17	22.7
Erytheromatous scaly eruptions (Psoriasis, Eczema)	-	0.0	1	1.3	1	1.3	2	2.7
Photodermatosis	-	0.0	2	2.7	-	0.0	2	2.7
Pigment disorders	-	0.0	1	1.3	-	0.0	1	1.3
Total	24	32.0	43	57.3	8	10.7	75	100

Chi-Square Tests:

	Value	Df	Asymp. Sig. (2-sided)
Pearson Chi-Square	13.900	12	.307
Likelihood Ratio	16.558	12	.167
Linear-by-Linear Association	3.227	1	.072
N of Valid Cases	75		

Chi-square significant at (P<.5). There is no significant association between skin conditions and type of skin disorders.

Table VI. Treatment Given to Respondents (n=75)

Treatment given	Frequency	%age
No Treatment given	55	73.3
Permetrine C	4	5.3
Calamine lotion	4	5.3
Anti histamine	4	5.3
Anti Fungal	5	6.7
Emollient	3	4.0

Discussion:

Pregnancy is a period of profound endocrine and metabolic changes, which are tolerated by the body for a relatively short time. During gestation both physiologic and pathologic changes can occur in the skin, nails, and hair shafts, which should be recognized and appropriately managed by the gynaecologist and dermatologist. The skin almost always shows changes during pregnancy. Some of these alterations are so predictable as to be considered normal. A heterogenic group, the dermatoses specifically associated with pregnancy are generally benign, even if they lead to great discomfort. Some of them require appropriate management because of the risk of maternal or foetal complications[7]. Physician adeptness at diagnosing and treating skin diseases specific to or affected by pregnancy is thus of vital importance in caring for pregnant women[8].

Pruritus during pregnancy is a common but less studied problem. The frequency of pruritus in pregnancy in our study was 9.07%(75 cases) while others have observed a lower incidence i.e. 4.6%(23 cases)[9]. Itching during pregnancy is a common symptom. Sometimes itching can be a sign of a liver abnormality; the skin component in these cases is called pruritis gravidarum. It is a rare condition occurring in 1-2/10,000 pregnancies. This condition is more common in the last three months of pregnancy and with twin pregnancies. In our study the incidence was 1.3%. About half the time it is associated with yellow jaundice. In our study 3% patients had jaundice. The stillbirth rate and rate of neonatal death associated with fetal distress is increased about 3-4 times. Liver function tests must be monitored during pregnancy and even afterwards. A history of pruritis during

pregnancy is a contraindication to the use of oestrogen containing contraceptive pills[10]. J Occhipinti and others recently published an algorithm for evaluating the cause of itching during pregnancy. In it they used the major breakdown as to whether or not skin lesions or a rash is present. Keeping in mind that sometimes scratching upon the itch can cause a skin rash or lesion, we often find that itching is generalized and there is no visible cause. If they do not work liver function test must be ordered[11]. Presence of fever may represent a viral illness like chicken pox.

There are some specific dermatoses of pregnancy that are quite dramatic but disappear completely after delivery. Intrahepatic cholestasis of pregnancy (obstetric cholestasis) or pruritis gravidarum is amongst the common causes of pruritis during pregnancy[12,13]. Pruritus of pregnancy or intra-hepatic cholestasis of pregnancy, present in 1 to 2% of pregnant women and may place the fetus at risk of delayed growth, prematurity or even death in utero[14]. Treatment relies on cholestyramine. Pemphigoid gestationis or herpes gestationis is an autoimmune disease of pregnancy occurring in multiparous women between the 28th and 32nd week of amenorrhoea.

Diagnosis is confirmed by histological examination of a bullous lesion. The disease usually regresses spontaneously after delivery, generally within a period of 1 to 17 months. Relapses, earlier on and more severe than during the initial episode, occur in 50 to 70% of subsequent pregnancies. Treatment is essentially based on corticosteroids: local Class II for the pauci-bullous and/or limited forms and general corticosteroid therapy for the severe forms. Polymorphic dermatitis of pregnancy, regroups various and similar entities described during pregnancy. They start during the third trimester of pregnancy, their clinical aspects are similar, their histology is non specific, the biological explorations are normal, direct immunofluorescence is negative, the progression is favorable for the mother and the child and the pathogenesis is unknown. Impetigo herpetiformis affects the primiparous woman in 80% of cases and the eruption usually appears during the 3rd trimester of pregnancy, or even after delivery. Relapses are frequent in subsequent pregnancies[15,16]. In our study, there was only one (1.3%) patient with specific dermatoses of pregnancy and that was pruritic urticarial papules and plaques of pregnancy (PUPPP).

The clinical features and prognosis of the specific dermatoses of pregnancy have been delineated through a number of retrospective and cohort studies. The molecular, biologic, and immunogenetic properties of herpes gestationis, pruritic urticarial papules and plaques of pregnancy, and intrahepatic cholestasis of pregnancy have been further clarified. A meta analysis reveals a higher prevalence of multiple gestation pregnancy (11.7%) among patients with pruritic urticarial papules and plaques of pregnancy. Several investigations have unraveled the fetal complications in intrahepatic cholestasis of pregnancy and herpes gestationis. New treatment modalities in intrahepatic cholestasis of pregnancy (cholestyramine, ursodeoxycholic acid) and herpes gestationis (cyclosporin, intravenous immunoglobulin, and tetracyclines postpartum) have shown promise and warrant further evaluation[17,18].

Evaluation of a patient with pruritis needs determination of the cause of itching by history and physical examination. History may include the time of onset, duration, extent, and nature of itching. Acute onset is rarely due to systemic diseases, which usually have a chronic onset. Localized pruritis is usually not due to internal disease. Drug history, bathing habits, occupation, hobbies and previous treatment (self-treatment, OTC preparations) need elaboration. Inquiries regarding personal and family history of atopy, skin disease, travel history are made. Physical examination includes inspection of entire skin system with adequate light and magnifying lens. Attention must be paid to areas, which are not accessible to the patient's eyes and hands. Lymphadenopathy and organomegaly must be excluded. Evaluation of persistent generalized pruritis can be one of the most challenging problems of clinical medicine[19].

The treatment modalities used by our study population were multiple. Major groups were anti-fungal preparations, anti-histamines, calamine lotion and local applications. No such study was found in literature, which focused on treatment modalities. Drugs caused pruritis in four (5.3%) women in our study, whereas the prevalence of chloroquine-induced pruritis was 64.5% amongst 200 pregnant ladies presenting in a university hospital in Nigeria. The reason for such a high prevalence may be that malaria is quite common in Nigeria[20].

Conclusion:

- The study indicates that Pruritus is a frequent problem during pregnancy.
- Most of the causes are benign and innocuous and obstetricians must be on the lookout for more sinister causes.
- Physician adeptness at diagnosing and treating skin diseases specific to or affected by pregnancy is thus of vital importance in caring for pregnant women.
- Dermatological problems must be ruled out before prescribing commonly used drugs.

References:

1. Thomas. J. Lawley, Kim B Yancy (2002): Skin changes and diseases in pregnancy: Chapter 168: Section 28.
2. Gilchrist BA: Pruritis - Pathogenesis,therapy and significance in systemic disease states:Arch.Intern Med (1982):142:101 – 105
3. Gary R Carter,W Mitchel Sams Jr, Peter J Lynch:Principles and Practice of Dermatology (2001)Chapter :Pruritis.
4. Greenberger P, Patterson R (1978) Safety of therapy for allergic symptoms during pregnancy. Annals of internal medicine 89: 234 – 237

5. Holmes C.Black MM (1982) Polymorphic eruption of pregnancy. Seminars in dermatology 7: 65 – 73.
6. Charles – Holmes. R (1988) Polymorphic eruption of pregnancy. Seminars in dermatology 8: 18 – 22.
7. Winton GB, Lewis CW. Dermatoses of pregnancy. J Am Acad Dermatol. 1982 Jun; 6(6): 977-98.
8. Callen JP. Pregnancy's effects on the skin. Common and uncommon changes. Postgrad Med. 1984 Jun; 75(8): 138-45.
9. Shanmugam S, Thappa DM, Habibullah S. Pruritis gravidarum:a clinical and laboratory study. J Dermatol: 1998: sep, 25 (9): 582 – 586.
10. Dacus JV (1990) Pruritis in pregnancy. Clinics in obstetrics & gynaecology 33: 738 – 745.
11. Occhipinti J, Parsey K, Nanda K: A diagnostic and therapeutic approach to pruritis in pregnant women. Prim Care Update Ob/Gyns 1997 4(6): 217–223.
12. Alcalay J, Ingber A, David M, Hazaz B, Sandbank M. Pruritic urticarial papules and plaques of pregnancy. Reprod Med. 1987 Apr;32(4):315-6
13. Shanmugam S, Thappa D M, Habeebullah S. Pruritus gravidarum: a clinical and laboratory study. J Dermatol. 1998 Sep; 25(9): 582-6.
14. Gagnaire JC, Descos L, Magnin P. Significance of pruritus during pregnancy. Relations with the hepatic disorders of gestation. Nouv Presse Med. 1975 Apr 12;4(15):1105-8.
15. Schmutz JL. Specific dermatoses of pregnancy Presse Med. 2003 Nov 29;32(38):1813-7
16. Vaughan Jones SA, Hern S, Nelson-Piercy C, Seed PT, Black MM. A prospective study of 200 women with dermatoses of pregnancy correlating clinical findings with hormonal and immunopathological profiles. Br J Dermatol. 1999 Jul; 141(1): 71-81.
17. George Kroumpouzos, Lisa M. Cohen. Specific dermatoses of pregnancy: An evidence based systemic review:Am J Obstet Gynaecol 2003 ;188:1083–92.
18. Roger D et al:Specific pruritic diseases of pregnancy: A prospective study of 3192 pregnant women. Arch Dermatol: 130, 734; 1994.
19. Furhoff WR Itching in pregnancy: A 15year follow-up study. Acta Medica Scandinavica 196: 403 – 410.)
20. Olayami O, Fehintola FA, Osungbade A, et al: Pattern of choloroquine-induced pruritis in antenatal patients at the University College Hospital, Ibadan. Nigeria. J Obstet Gynaecol. 2003 Sep; 23 (5): 490 – 495