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Specific Dermatoses of Pregnancy among Iraqi Pregnant Women

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Abstract:

Background: The specific dermatoses of pregnancy are a problem that has not been investigated among Iraqi pregnant women before.

Objective: To evaluate the frequency & the clinical characteristics of specific dermatoses of pregnancy among Iraqi pregnant women

Patients & Methods: This is a prospective case series multicentric study. Clinical data of 318 patients with specific dermatoses of pregnancy were recorded during 5 years study period (Jan.2003- Jan. 2008) at 2 hospitals & 2 private dermatological clinics in Basra, southern Iraq.

Results: Polymorphic eruption of pregnancy (PEP) was diagnosed in 29.5% of patients, 78.4% were primigravidae & multiple pregnancies in 11%. Atopic eruption of pregnancy (AEP) was seen in 19.7%, majority in their first half of pregnancy, atopic diathesis was recorded in 10%. Intrahepatic cholestasis of pregnancy (ICP) in 14.7%, mostly started in late pregnancy & jaundice was not observed. Pemphigoid gestationis (PG) in 2.2%, majority of patients were multiparous with postpartum flare-up. Erythema-multiforme (EM) like eruption with widespread targetoid lesions was noticed in 2.2%. Generalized pustular psoriasis of pregnancy (GPPP) in 4 (1.4%).

Conclusion: The specific dermatoses of pregnancy are frequent problems among Iraqi pregnant women.

Key words: Specific, Dermatoses, Pregnancy,

Introduction:

During pregnancy a dramatic immunological, endocrine, metabolic & vascular changes occur that make the pregnant women particularly susceptible to skin changes both physiological & pathological^[1].

The specific dermatoses of pregnancy constitute a heterogeneous group of strongly pruritic inflammatory dermatoses associated exclusively with pregnancy & or the immediate post-partum period^[2]. The classification of these diseases remain controversial, however, 3 main classifications are currently used, the first suggested by Holmes & Black & include: pemphigoid gestationis [syn. Herpes gestationis (HG)], polymorphic eruption of pregnancy (PEP) syn. Pruritic Urticarial papules & plaque of pregnancy (PUPPP), prurigo of pregnancy (PP) & pruritic folliculitis of pregnancy (PFP)^[3].

The second proposed by Shornick consisted of: HG, PEP, PP & intrahepatic cholestasis of pregnancy (ICP)^[4].

Recently, Ambros-Rudolph introduced the following classification: HG, PEP, ICP & atopic eruption of pregnancy (AEP)^[5].

To the best of our knowledge, the problem of specific dermatoses of pregnancy has not been investigated among Iraqi pregnant women before & there are no previously published data addresses this issue, therefore, we sought to evaluate the frequency & other clinical characteristics of these diseases.

Patients & Methods:

A prospective case-series multicentric study was conducted during 5 years period (Jan.2003- Jan.2008) where a total of 318 consecutive pregnant women with specific dermatoses of pregnancy were recruited in the study at Basra General Hospital, Basra Teaching Hospital & 2 private dermatological clinics in Basra Governorate, southern Iraq. In order to improve our understanding of this problem & to ensure better evaluation & assessment of each individual patient, we setup a team work which consisted of 2 dermatologists & gynaecologist. Cases with dermatoses specific for pregnancy were included in the study, their inclusion diagnostic criteria are summarized in **table(1)** depending on the most recent classification suggested by Ambros-Rudolph et al^[5]. Patients with either coincidental skin diseases such as scabies or pyoderma & those patients with physiological skin changes during pregnancy like striae distensae were excluded. Signed consent was obtained from each patient prior to study. The approval of the Institutional Ethics Committee of Faculty of Medicine of Basra University was obtained before the initiation of study.

A detailed clinical & obstetric history was obtained including age, parity, similar problem in previous pregnancies, single or multiple pregnancy, onset & duration of the disease. Clinical general & cutaneous examinations were performed with special emphasis on the type of skin lesions, their

site at onset & distribution, presence of jaundice, personal & family history of atopy.

Laboratory investigations including total serum IgE levels measurement by a two-site enzyme linked immunosorbent assay (ELISA), a value \geq 100 IU/ ml was considered elevated according to

the instruction of supplying company (Biomagherb-Tunisia)& serum bile acids were measured in selected patients. Histopathological examination of biopsy specimens obtained from lesional skin was done in some patients.

Table 1: Diagnostic criteria of specific dermatoses of pregnancy ^[5]

Skin disease	Diagnostic criteria
1-pemphigoid gestationis	Urticarial & Bullous eruption with linear deposit of C3 \pm IgG at dermo-epidermal junction on direct immunofluorescence microscopy (IMF).
2-Intrahepatic cholestasis of pregnancy	Pruritus with exclusively secondary skin changes (caused by scratching) & elevated serum level of bile acids.
2-Polymorphic eruption of pregnancy	Polymorphous eruption mainly papulo-Urticarial, started within striae distensae, negative IMF.
3-Atopic eruption of pregnancy	Eczematous, papular, prurigo lesions, elevated serum IgE, personal \pm family history of atopy.

Results:

Three-hundred eighteen pregnant patients with various types of specific dermatoses of pregnancy were seen during 5 years study period. The mean of their ages was 26.3 ± 7.3 years (range: 18-42 years), 180 (56%) were primiparous & 138 (44%) were multiparous.

Various types of specific dermatoses were reported **Table 2**. The most frequent problem was polymorphic eruption of pregnancy (29.5%), 149 (78.4%) of them were primiparous & 41 (21.6%) were multiparous.

Only 2 cases (4.8%) of multiparous patients reported a similar problem in previous pregnancies, twin pregnancy was observed in 35 (11%). The lesions were started at 3rd trimester in 139 (72.2%), while 2nd trimester onset was reported in 53 (27.8%), none was in 1st trimester. Characteristically, the eruption started at the abdomen in the majority of patients & then progressed to involve most parts of the body sparing face, palms & soles, involvement of area of striae with relative peri-umbilical sparing was observed in most patients.

Atopic eruption of pregnancy (AEP) was the second most common disease encountered (19.7%), we observed that 46 (73%) were multiparous & 17 (27%) were primiparous. In addition, 34 out of 46 multiparous patients (74%) reported similar problem in previous pregnancies. The onset of skin lesions occurred during early pregnancy in 12 (19%), while 42 (66.6%) in 2nd trimester & only 6 (9.5%) in their late trimester. The lesions consisted of excoriated papules & nodules on xerotic skin mainly on upper & lower limbs & less on trunk. Personal or family history of atopic diathesis was reported in 16 (10%) of cases. Total serum level of IgE was measured in all patients & was elevated $>$ 100 IU/ml in 55(88%) patients.

Intrahepatic cholestasis of pregnancy (ICP) was diagnosed in 47 (14.7%) patients, 24 (51%) were

primiparous & 23 (49%) were multiparous, 3 of them (13%) had similar symptoms in previous pregnancies. The disease had started suddenly as a generalized pruritus during the 2nd trimester in 29.7% or 3rd trimester in 66%, followed by secondary excoriated skin lesions & their severity & extent was correlated with the duration of pruritus. Jaundice was not observed in any of our patients. Serum level of bile acids was estimated in 12 patients & found to be elevated (mean=17 μ mol/L).

Pemphigoid gestationis (PG) was seen in 7 (2.2%) patients; all – except one – were multiparous with single gestation pregnancy & had history of previously affected pregnancies. The onset of the problem was in the 3rd trimester except in one grand multiparous patient who had 2nd trimester onset. On the other hand, 6 (85%) patients experienced post- partum worsening. Clinically, the lesions were started as pruritic erythematous annular or polycyclic plaques on abdomen with peri-umbilical involvement followed by development of tense vesicles & bullae sparing face, palms, soles & mucous membrane. The diagnosis was confirmed by demonstrating sub-epidermal bullae on histopathological examination.

We observed 7 multiparous women (2.2%) had a widespread Erythema – multiforme –like lesions where targetoid lesions predominating the clinical picture, involvement of abdominal striae was not seen, 4 (57%) of them had sudden onset in 3rd trimester, none of them had the same problem in previous pregnancies & despite that the lesions persisted throughout the course of pregnancy, they all resolved completely in the immediate post-partum period.

Generalized pustular psoriasis of pregnancy (GPPP) or so called impetigo herpetiformis was noticed in 4 (1.5%) patients, they were multiparous with onset in the 3rd trimester, none of them had psoriasis before pregnancy & they all had similar

symptoms in previous pregnancies. The eruption consisted of generalized small pustules on background of marked Erythema started in the body flexures. Systemic upset with fever, malaise, vomiting & diarrhoea, raised ESR, leucocytosis&

hypocalcaemia were noticed in all reported patients. The diagnosis was confirmed histologically by demonstrating large sheets of subcorneal neutrophil – rich micropustules in psoriasiform epidermis.

Table 2: The clinical characteristics of patients with specific dermatoses of pregnancy (n= 318).

	PEP		AEP		ICP		PG		EM-like		GPPP	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
	190	29.5	63	19.7	47	14.7	7	2.2	7	2.2	4	1.5
Parity:												
Primiparous	149	78.4	17	27	24	51	1	14.2	-		-	
Multiparous	41	21.6	46	73	23	49	6	85.8	7	100	4	100
Onset:												
1 st trimester	-		12	19	2	4.2	-		1	14.2	-	
2 nd trimester	53	27.8	42	66.6	14	29.7	1	14.2	1	14.2	-	
3 rd trimester	137	72	6	9.5	31	66	6	85.8	4	57.1	4	100
Previously affected pregnancy	2	4.8	34	74	3	13	6	100	-		4	100

PEP: polymorphic eruption of pregnancy, AEP: atopic eruption of pregnancy, ICP: intrahepatic cholestasis of pregnancy, PG: pemphigoid gestationis, EM-like: Erythema multiforme like, GPPP: generalized pustular psoriasis of pregnancy

Discussion:

The specific dermatoses of pregnancy represent a group of inflammatory dermatoses of great diagnostic confusion & misleading terminology. The lack of clinical awareness of these conditions may be responsible, in part, for the infrequency of these dermatoses seen at any one institution ^[5]. In addition to the worldwide paucity of the published data, Iraqi studies which address this issue are also lacking. The result of the present study demonstrates that the specific dermatoses of pregnancy are frequently encountered problem in Iraqi pregnant women. polymorphic eruption of pregnancy (PEP) being the most prevalent (29.5%), most of them were primiparous in their late trimester & high incidence of twin pregnancies was reported, these findings are comparable with other studies ^[6,7,8]. Moreover, the clinical features of patients with PEP were typical & unlikely to be mixed with the pre-bullous stage of PG because on follow-up period, bullae (which is the whole mark of PG) never developed in our patients with PEP & relative peri-umbilical sparing was highly characteristic .

In addition, we observed a skin rash in 7 patients closely mimic Erythema-multiforme (EM) where targetoid lesions dominating the clinical picture. Despite that EM may occur in pregnancy but this finding whether pregnancy-specific or coincidental problem during pregnancy remained to be elucidated.

It was previously reported that prurigo of pregnancy (PP) is a distinct entity of pregnancy specific dermatoses; however, recent studies demonstrated that PP is regarded as part of disease spectrum called atopic eruption of pregnancy

(AEP). The term AEP was firstly introduced to describe one disease that summarizes all patients with eczema of pregnancy, prurigo of pregnancy & pruritic folliculitis of pregnancy. Although these diseases showed variable clinical manifestations but shared common atopic diathesis (5, 6). Our patients with AEP had monomorphic or dimorphic papulo-nodular rash mainly on extensor surfaces of the limbs that is consistent with prurigo sub-type of AEP ^[5].

Pemphigoid gestationis (PG) is a rare autoimmune bullous disease that is associated with pregnancy (1 in 50 000 pregnancies) ^[9], we reported 7 patients (2.2%) with PG; their clinical presentation was similar to that of other studies ^[5, 6, 9].

The diagnosis was confirmed by histopathological examination using routine staining with hematoxylin-eosin. Immunofluorescence examination was not available during the study period.

Intrahepatic cholestasis of pregnancy (ICP) usually manifested in the 3rd trimester by itching & skin lesions caused by scratching & may be accompanied by jaundice ^[6] with the increased risk of fetal & maternal complications such as fetal distress, stillbirth, premature delivery & post partum hemorrhage ^[10,11]. Although our patients with ICP had sever itching, none of them developed jaundice & only few of them (13%) had similar symptoms in previous pregnancies compared with high recurrence rate in patients with ICP in other studies (60% to 70%) ⁽¹⁴⁾, furthermore, family history & multiple gestation was not reported. These findings suggest that ICP is mild & unicteric form.

Many authors agreed that generalized pustular psoriasis of pregnancy (GPPP) is a disease seen exclusively during pregnancy^[1,12], while others consider it as a form of pustular psoriasis, probably precipitated by pregnancy^[3,14]. The result of our study confirmed that GPPP is more likely to be specific for pregnancy in our studied population, firstly because it was noticed only during pregnancy & subsided even spontaneously after delivery, it tended to recur in each subsequent pregnancy & patients were freed of symptoms in the periods between pregnancies with no evidence of psoriasis.

The ongoing improvement in the understanding of the aetio-pathogenesis of pregnancy dermatoses has resulted in continual re-classification of these diseases. The most recent classification was proposed by Ambrose-Rudolph & include: HG, PEP, ICP & AEP^[5], however, on applying this classification on our series of patients many who where diagnosed with GPPP will be omitted as they are not mentioned in the classification, therefore, we suggest to include patients with GPPP in the classification of pregnancy specific dermatoses depending on our patients diagnostic criteria.

The major limitations of the study were most of patients are lost to follow-up therefore the maternal & fetal outcome can not be adequately predicted & the access to some investigations such as immunofluorescence tests were lacking & the diagnosis of pemphigoid gestationis depended largely on clinical & histopathological findings.

In conclusion, the specific dermatoses of pregnancy seems to be a frequent problem among Iraqi pregnant women & with the increased clinical awareness of their occurrence & by using a simplified classification, the treating physician will be allowed to make more accurate diagnosis & initiate appropriate treatment.

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