

Clinical Manifestations and Management of Prurigo in Pregnancy: A Systematic Review

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Introduction

Prurigo of pregnancy (PP) is a specific dermatosis characterized by an extremely pruritic papulonodular predominantly involving the dorsum of the hands and feet and extensor surfaces of the extremities. However, it may also affect other sites, such as the trunk.

PP affects approximately 1 in 300 to 1 in 450 pregnancies and typically starts during mid-pregnancy, around 25 to 30 weeks' gestation. The illness progresses slowly during pregnancy and might linger for weeks or months after giving birth. PP is diagnosed clinically as there are no identifiable histopathological, laboratory, or immunofluorescent microscopic abnormalities. Moreover, The pathophysiology of PP remains elusive.

Treatment of PP, often symptomatic, moderately and highly strong topical steroids have a beneficial effect on the lesions. Other medications, such as oral antihistamines such as chlorpheniramine and diphenhydramine, can also be utilized. Symptomatic treatment, such as antipruritic topical creams containing menthol and cooling baths, can also aid in the patient's recovery. Oral corticosteroids can be used in cases of severe pruritus. Moreover, some patients with PP have greatly benefited from narrow Ultraviolet B phototherapy.

As far as we know this is the first systematic review that details PP in its various aspects. Therefore, this systematic review aims to comprehensively outline the clinical features of PP, exploring the diverse ways in which this condition manifests in expectant mothers. It also seeks to offer a thorough and current evaluation of the variety and efficacy of various treatment methods for PP.

Methods

This systematic review was done in accordance with Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) 2020 guidelines. A systematic review search was undertaken in PubMed, Google Scholar, Ovid MEDLINE, and the Crocagne Central Register of Controlled Trails (CENTRAL) from the databases' establishment to 13 August 2024.

The literature was examined, focusing on purgerio of pregnancy in individuals aged ≥18 years. The studies were deemed eligible if they were: 1. Randomized Controlled Trials (RCTs), cohort studies, case control, cross-sectional, case series, and case reports, 2. reported clinical manifestations and treatment for PP, 3. written in the English language. The authors independently evaluated the titles and abstracts of publications for the complete text reading using Rayyan (Rayyan Systems Inc., Cambridge, MA, United States of America) after removing duplicates. Then, the authors additionally independently examined each article's text in its entirety.

Results

Study selection:

A database search was performed, and 494 articles were retrieved for screening. After eliminating duplicates, 349 studies remained. The first stage is the title and abstract screening, and 354 articles were removed due to studies being out of the scope of the current research. After the first stage, the number of articles remaining was 40. Full-text screening was performed on the remaining studies, and 36 studies were excluded. The final 4 articles were included in our article.

Study characteristics:

Author, year	Study Type	Country	Age (Yrs)	Gestation Week	Lesion description	Lesion Distribution	Prurigo of pregnancy duration weeks	Medical history
Ravelli,2020	Case Series	United States, Brazil, and Europe	21–43	14-33 weeks (mean gestational age: 24.8 weeks; median gestational age: 27.5 weeks).	Excoriated, erythematous papules	Abdomen, shoulders, back, chest, all extremities, upper extremities, and buttocks.	3 – 21 Weeks	Polymorphic eruption of pregnancy n = 2; (16.6%) prurigo of pregnancy (n = 2 (16.6%) Gestational pruritus (n = 1 (8.3%) Pruritic skin conditions (Prurigo nodularis and pruritus of unclear etiology) N=2 (10%), Psychiatric disorder N=4 (20%), Hypothyroidism N=2 (10%), Obesity N=2 (10%), Diabetes N=1, Allergies N=1, Seasonal allergies N=1
Nurse,1968	Case Series	Australia	15-44	< 20 weeks = 3 20-24 Weeks = 7 25-29 Weeks = 10 30-34 Weeks = 6 35-39 Weeks = 6 ≥ 40 Weeks = 7 after delivery= 1	Papular lesions with excoriation, maculopapular erythema	Abdomen, and Limbs.	NA	Anemia N=1, History of pruritus in previous pregnancies N=2
Kaur,2012	Cross Sectional Study	Egypt	NA	26th and 28th week	Discrete excoriated papules and nodules	Limbs and abdomen.	NA	NA
Müller,2023	Case Report	Germany	36	NA	Multiple excoriated papules and nodules	Trunk and Limbs	NA	Genetic predisposition to cholestatic liver disease, history of intrahepatic cholestasis of pregnancy, bariatric surgery, and obesity

Management and treatment for prurigo in pregnancy:

Author, Year	Treatment for Prurigo in pregnancy		Response to treatment
	Type of treatment (class)	Dosage	
Ravelli,2020	Oral antihistamines, , Topical steroids, Augmented Betamethasone, Prednisone Emollients, Benzoyl peroxide, Narrowband ultraviolet light B	Prednisone at a dose of 20 to 30 mg/day	N=5 partial response to treatment or resolved at or immediately after delivery N=15 satisfactory response to treatment, and faded prior to delivery. N=6 treated with oral prednisone due to lack of response with other modes of treatment N=1 treated well with Narrowband ultraviolet light B
Nurse,1986	Phenol in oily calamine lotion and Trimeprazine, Sedatives like Barbiturates, Steroid creams, Prednisone, Oral Chlorpromazine, Erythromycin	Trimeprazine 10 mg three times daily,1% phenol,200 mg of quinalbarbitone	Early =type at the time of delivery Late type=3rd-4th week postpartum Associated with secondary eczematous changes= 3 months
Kaur,2012	Topical steroids and Systemic antihistamines	NA	Spontaneous resolution of lesions within 4 weeks postpartum
Muller, 2002	Topical steroids: High-dose oral non-sedating antihistamines, oral Prednisolone, Gabapentin, Azathioprine , Ursodeoxycholic acid, Naloxone	Gabapentin 900 mg daily, Azathioprine 150 mg daily, Naloxone 0.02 mg/kg	Treatment response to Naloxone within 4 weeks

Discussion

- This review successfully compiled data from a range of study designs, including case reports and case series, and cross sectional studies, encompassing a geographically diverse patient population from the United States, Brazil, Australia, Egypt, and Germany. This broad representation enhances the generalizability of the findings, though further research across a wider range of geographical locations is still warranted. Furthermore, there is a distinct lack of articles with higher evidence study designs such as systematic reviews, cohort studies and case controlled studies. Therefore, further research with a wide array of study designs should be conducted in the future.

- The analysis of the included studies revealed considerable heterogeneity in the clinical presentation of PP. While severe pruritus and characteristic skin changes formed the core diagnostic criteria, the gestational age at onset varied significantly, ranging from early pregnancy to the postpartum period. The distribution of the lesion is also quite variable, while mostly afflicting the extremities it can also affect the back, buttocks and shoulders. The presence or absence of a history of atopy and the potential role of other diseases such as diabetes and intrahepatic cholestasis further complicated the diagnostic picture, highlighting the need for a more nuanced understanding of the condition's pathophysiology. Future research should focus on identifying specific biomarkers, genetic predispositions or illness that might contribute to the development of PP.

- The treatment strategies employed in the included studies were equally diverse, reflecting the current lack of established treatment guidelines. The range of therapeutic approaches, from topical steroids and emollients to systemic antihistamines, prednisone, and even Ultraviolet B phototherapy, underscores the need for a more standardized and evidence-based approach. The varied treatment responses were observed, with some patients experiencing complete resolution within 24 hours while others showed spontaneous resolution only weeks postpartum, further emphasizing the heterogeneity of the condition and the need for personalized treatment strategies. Further research is needed to fully understand how PP affects the skin's long-term health, including investigating the lasting impact seen after lesions have healed

Conclusion

This systematic review highlights the complexity of PP, both in its clinical features and treatment. While the clinical features, onset, and treatment responses demonstrate considerable variability, the evidence indicates a pressing need for a more standardized approach to diagnosis and management. It underscores the necessity for personalized treatment plans customized to individual patient profiles. The study highlights the need for a larger scale. These prospective studies utilize standardized outcome measures to enable more substantial treatment method comparisons and pinpoint factors predicting treatment effectiveness.

References

