Pregnancy-Related Dermatoses and the Risks

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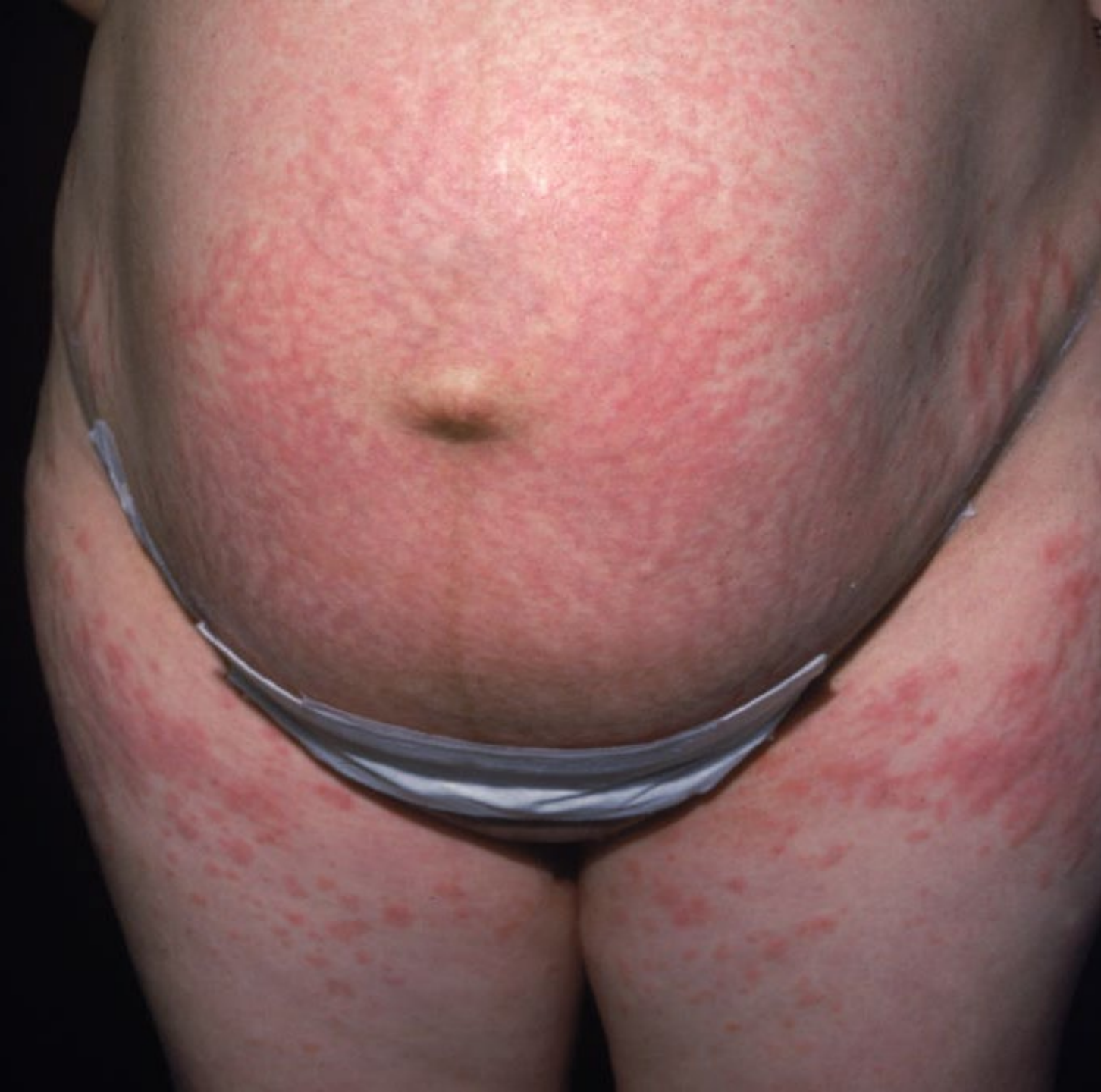
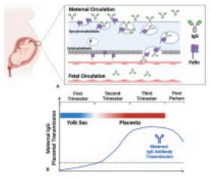


Conflicts of Interests/Disclosures

- None



Safety of dermatologic medications in pregnancy and lactation: An update - Part I: Pregnancy

Patrick McMullan, Marita Yaghi, Thu M. Truong, Marti Rothe, Jenny Murase, Jane M. Grant-Kels
Published online: January 25, 2024
p619-648

CME

Safety of dermatologic medications in pregnancy and lactation: An update—Part II: Lactation

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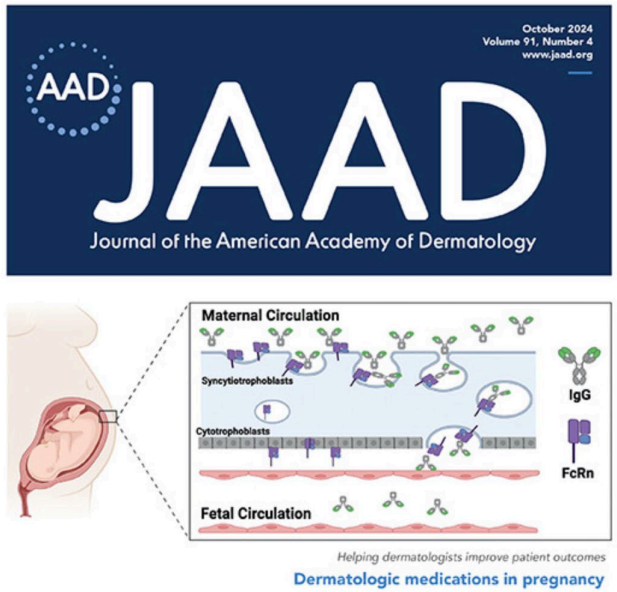
CME



Learning Objectives

- Describe and recognize the specific dermatoses of pregnancy
- Describe the maternal and fetal risks for specific dermatoses of pregnancy
- Describe the risks for recurrence for specific dermatoses of pregnancy

Specific Dermatoses of Pregnancy

Clinics in Dermatology (2016) **34**, 314–319

ELSEVIER

Clinics in Dermatology

Dermatoses of pregnancy: Nomenclature, misnomers, and myths

Melissa Danesh, BS[a], Miriam Keltz Pomeranz, MD[b], Erin McMeniman, MD[c,d], Jenny E. Murase, MD[a,e,*]

Why so confusing?

- Numerous classifications systems/synonyms
- Misleading/confusing terminology
- Uncommon/rare & variable clinical presentation
- Not always a definitive diagnostic test
- Sometimes onset is postpartum

Table 2 Nomenclature of specific dermatoses of pregnancy

Current classification	Historic synonyms
Polymorphic eruption of pregnancy (PEP)	• Pruritic urticarial papules and plaques of pregnancy *
	• Toxic erythema of pregnancy
	• Late onset prurigo of pregnancy
	• (Bourne's) toxemic rash of pregnancy
	• Erythema multiforme of pregnancy
	• Linear IgM dermatosis of pregnancy †
Atopic eruption of pregnancy (AEP)	• Prurigo of pregnancy
	• Prurigo gestationis (of Besnier)
	• (Nurse's) early-onset prurigo of pregnancy
	• Papular dermatitis of pregnancy
	• Pruritic folliculitis of pregnancy
	• Eczema in pregnancy
	• Linear IgM dermatosis of pregnancy †
Pemphigoid gestationis (PG)	• Herpes gestationis
Intrahepatic cholestasis of pregnancy (ICP)	• Cholestasis of pregnancy
	• Pruritus/prurigo gravidarum
	• Obstetric cholestasis/hepatosis
	• (Idiopathic) jaundice of pregnancy
	• Hepatosis gestationalis
	• Icterus gravidarum
Pustular psoriasis of pregnancy (PPP)	• Impetigo herpetiformis
	• Generalized pustular psoriasis in pregnancy

IgM, immunoglobulin M.

* Pruritic urticarial papules and plaques of pregnancy (PUPPP) is still currently used in the United States as a synonym of PEP.

† Linear IgM dermatosis of pregnancy has been categorized under PP, of the current categorization AEP, as well as under PEP.

Current Classification System

- Atopic eruption of pregnancy
- Pemphigoid gestationis
- Polymorphic eruption of pregnancy
- Intrahepatic cholestasis of pregnancy

REPORTS

The specific dermatoses of pregnancy revisited and reclassified: Results of a retrospective two-center study on 505 pregnant patients

Christina M. Ambros-Rudolph, MD,[a] Robert R. Müllegger, MD,[a] Samantha A. Vaughan-Jones, MD,[b] Helmut Kerl, MD,[a] and Martin M. Black, MD, FRCP, FRCPath[b]
Graz, Austria, and London, United Kingdom

Table 1 Classification schemes of specific dermatoses of pregnancy

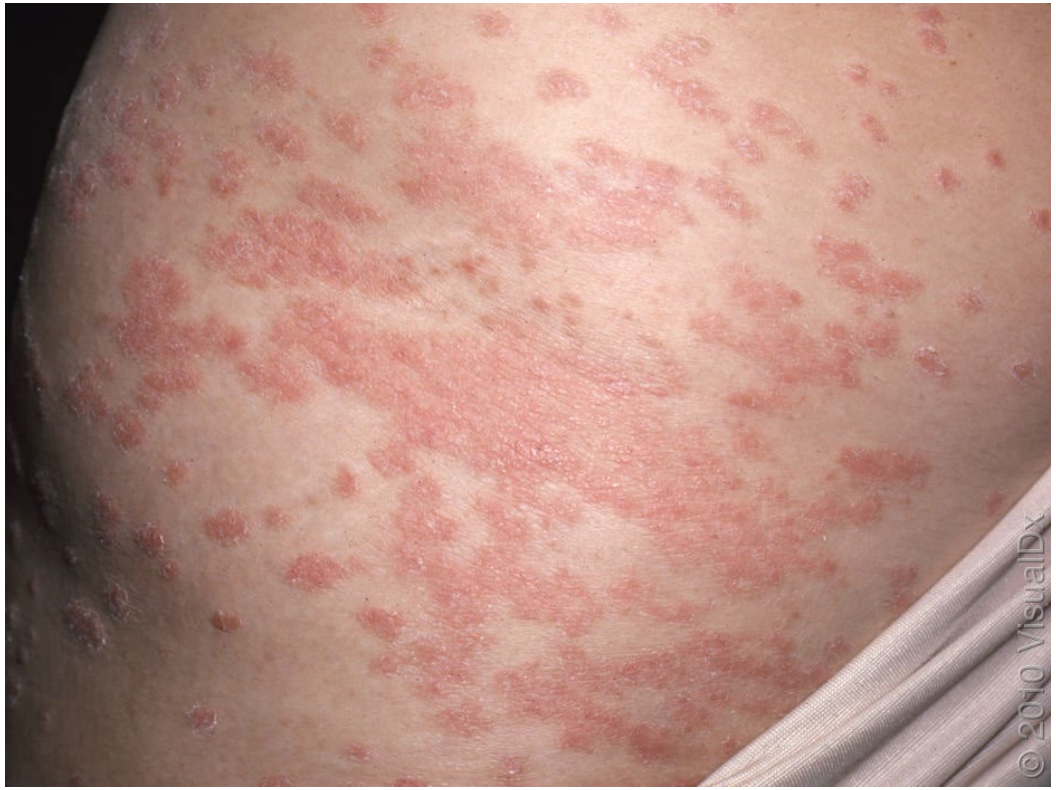
Author	Year	Evolution of the classification scheme of specific dermatoses of pregnancy
Holmes and Black	1983	PG, PEP, PP, PFP
Shornick	1998	PG, PEP, PP*, ICP
Ambros-Rudolph et al.	2006	AEP†, PG, PEP, ICP

AEP, atopic eruption of pregnancy; *ICP*, intrahepatic cholestasis of pregnancy; *PEP*, polymorphic eruption of pregnancy; *PG*, pemphigoid gestationis; *PP*, prurigo of pregnancy.
* PFP was categorized under PP.
† PP and PFP were categorized under AEP.

29 y/o Primigravida, 20-week Gestation

- 3-week history of itchy rash

- What do you think?
  - A. Atopic eruption of pregnancy
  - B. Pemphigoid gestationis
  - C. Polymorphic eruption of pregnancy
  - D. Intrahepatic cholestasis of pregnancy

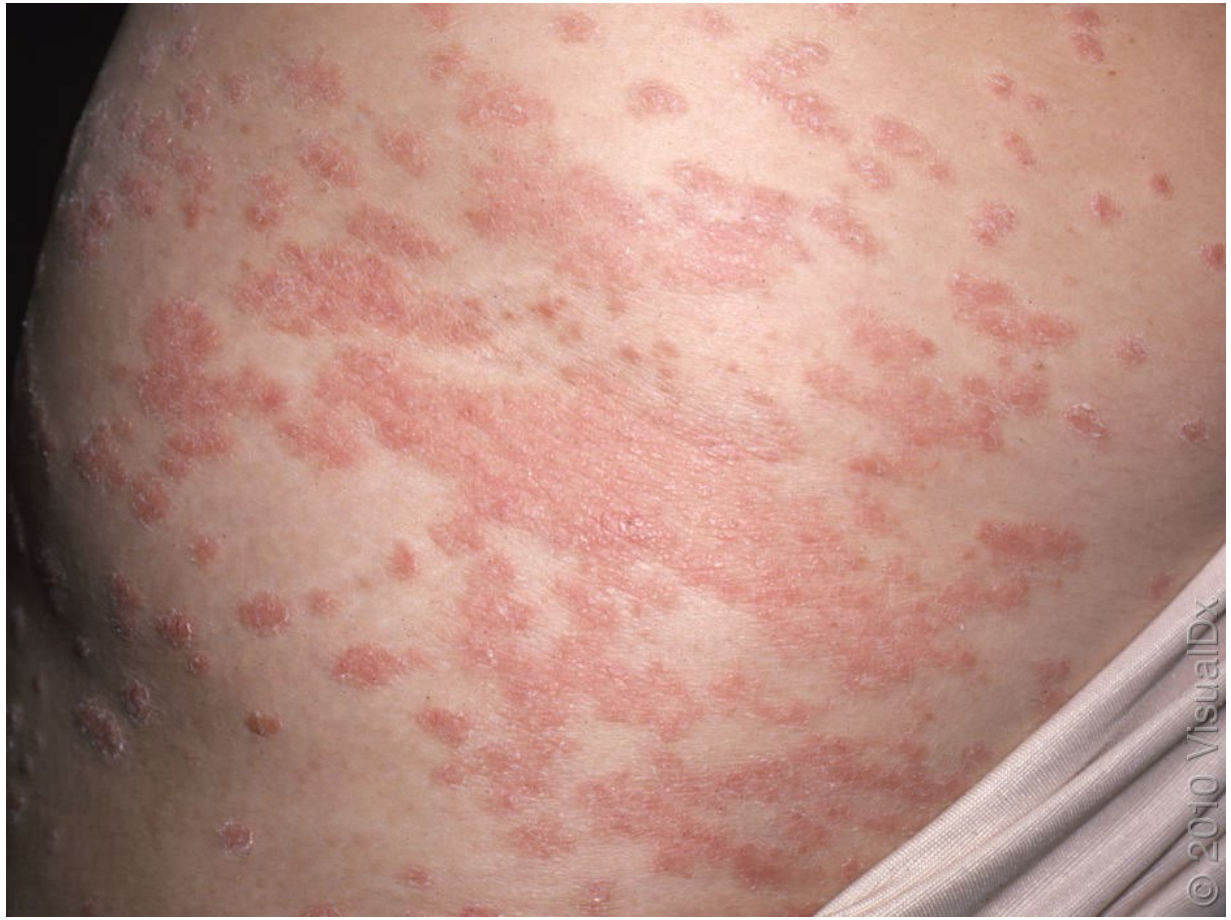


Atopic Eruption of Pregnancy

- Synonyms
  - Prurigo of pregnancy
  - Prurigo gestationis
  - Early-onset prurigo of pregnancy
  - Papular dermatitis of pregnancy
  - Pruritic folliculitis of pregnancy
  - Eczema in pregnancy
- Most common dermatosis of pregnancy (50%)
- Usually develops prior to third trimester
- Pregnancy-associated switch to a T-helper 2-mediated immune response

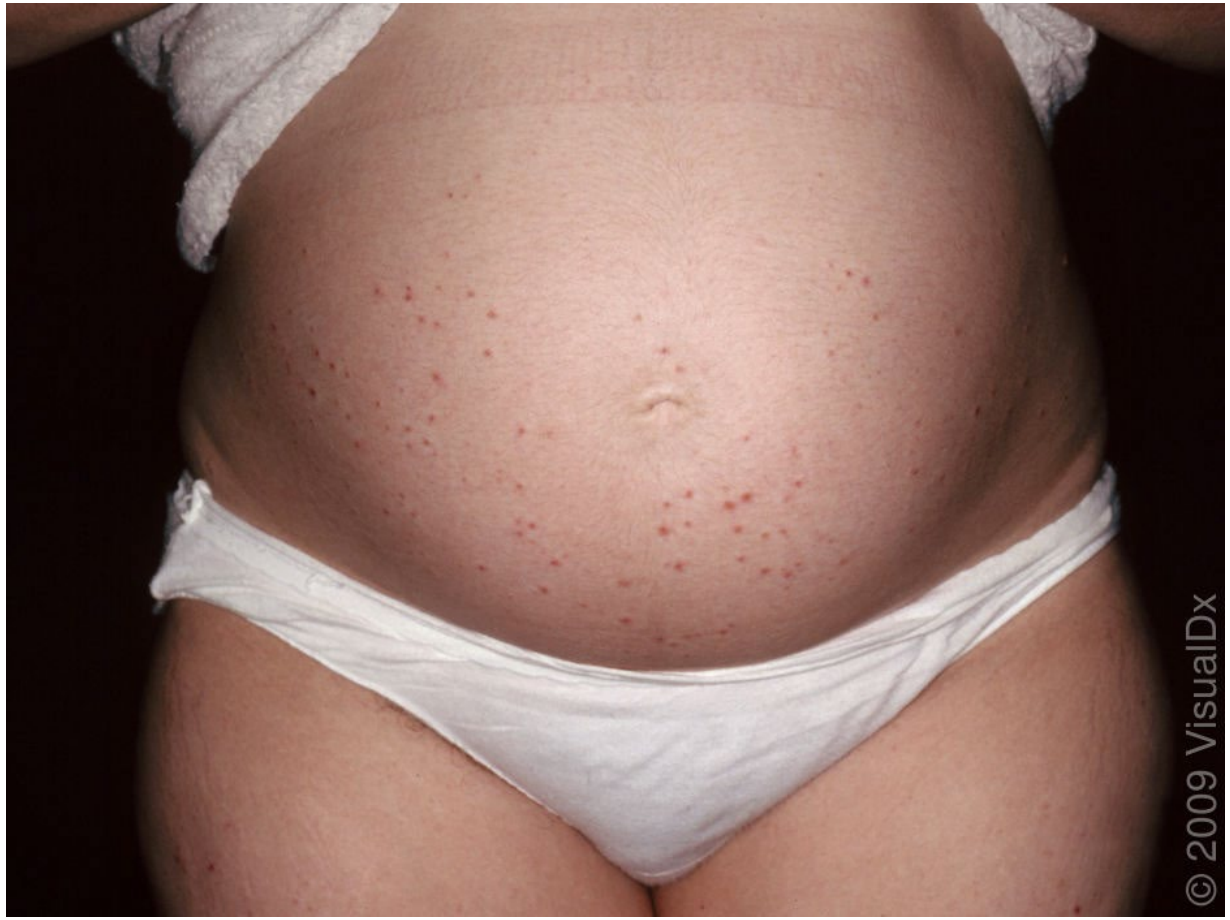
Atopic Eruption of Pregnancy – Clinical

- 80% have eczema for the first time or after a period of long remission
- Eczematous (E type)
  - Occurs in two-thirds of cases affecting typical sites of atopic dermatitis (face, neck, and flexural surfaces)
  - Abdomen



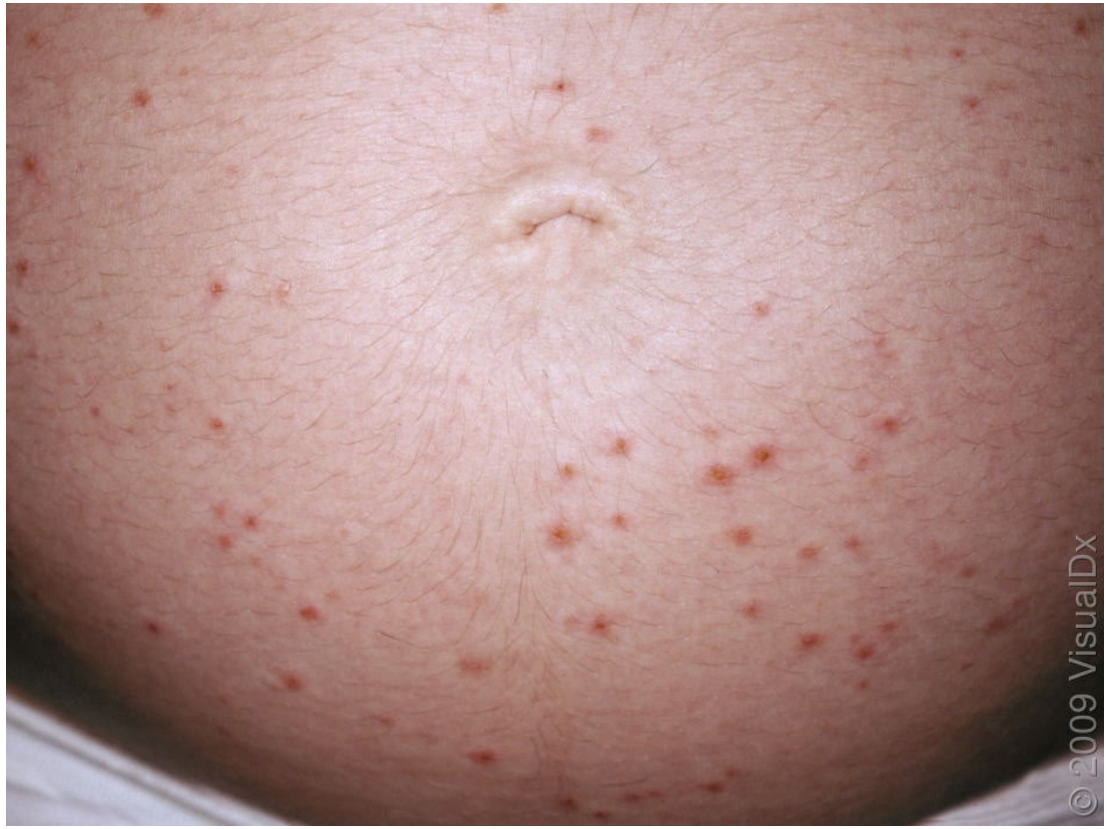
Atopic Eruption of Pregnancy – Clinical

- Papular (P type)
  - Occurs in one-third of cases, presents with papular lesions, usually small erythematous papules on extremities and trunk
- If no history of atopy, may have minor criteria such a keratosis pilaris, Dennie Morgan lines etc



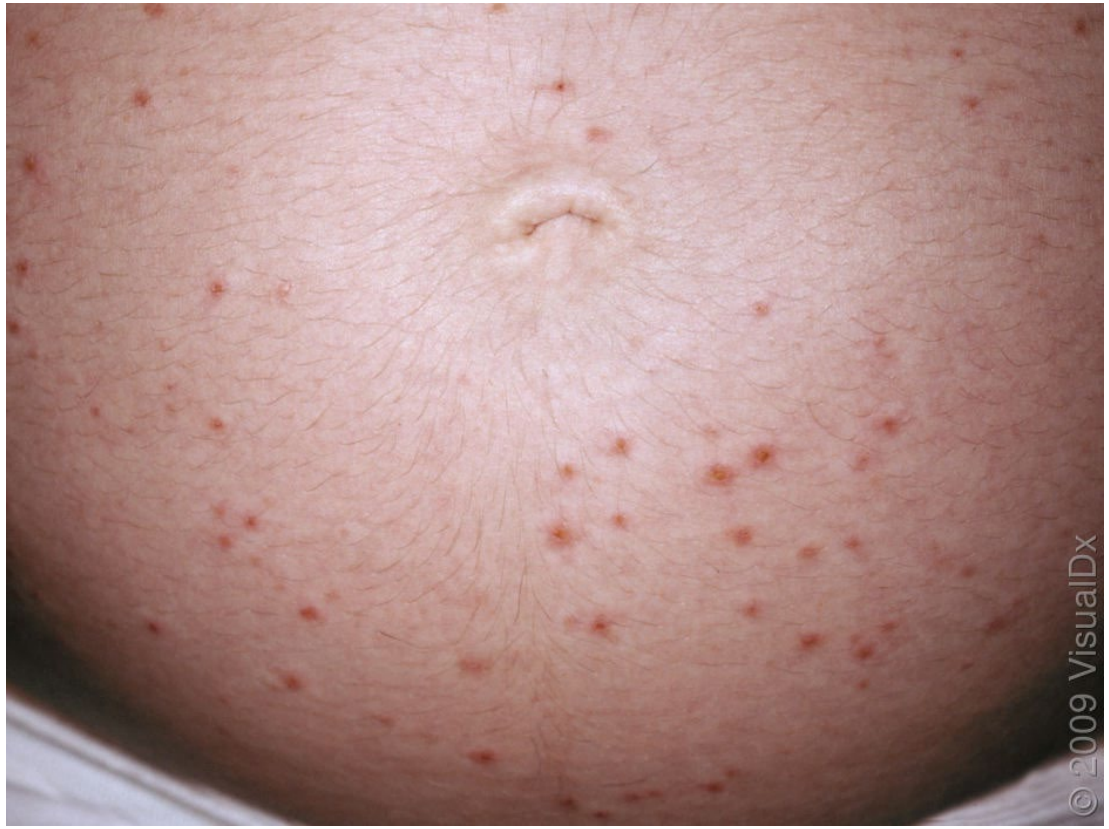
Atopic Eruption of Pregnancy

- Diagnosis
  - Usually clinical, history of atopy
  - ↑ IgE Levels
  - Histology non-specific
- Treatment
  - Topical steroids



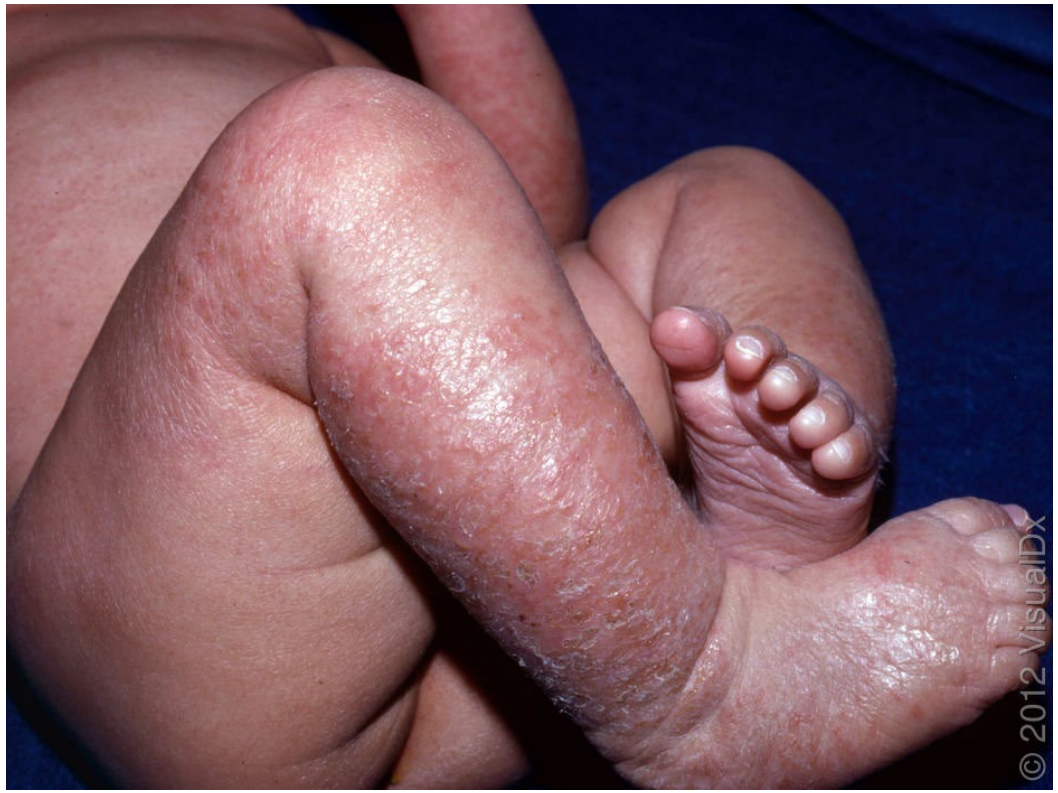
Atopic Eruption of Pregnancy

- So, what are the maternal risks?
  - None
- Recurrence?
  - Maternal recurrence likely, especially if history of atopy



Atopic Eruption of Pregnancy

- Fetal Risk
  - None
  - Infants may develop atopic dermatitis



Prevention of Atopic Dermatitis in Unborn Child?

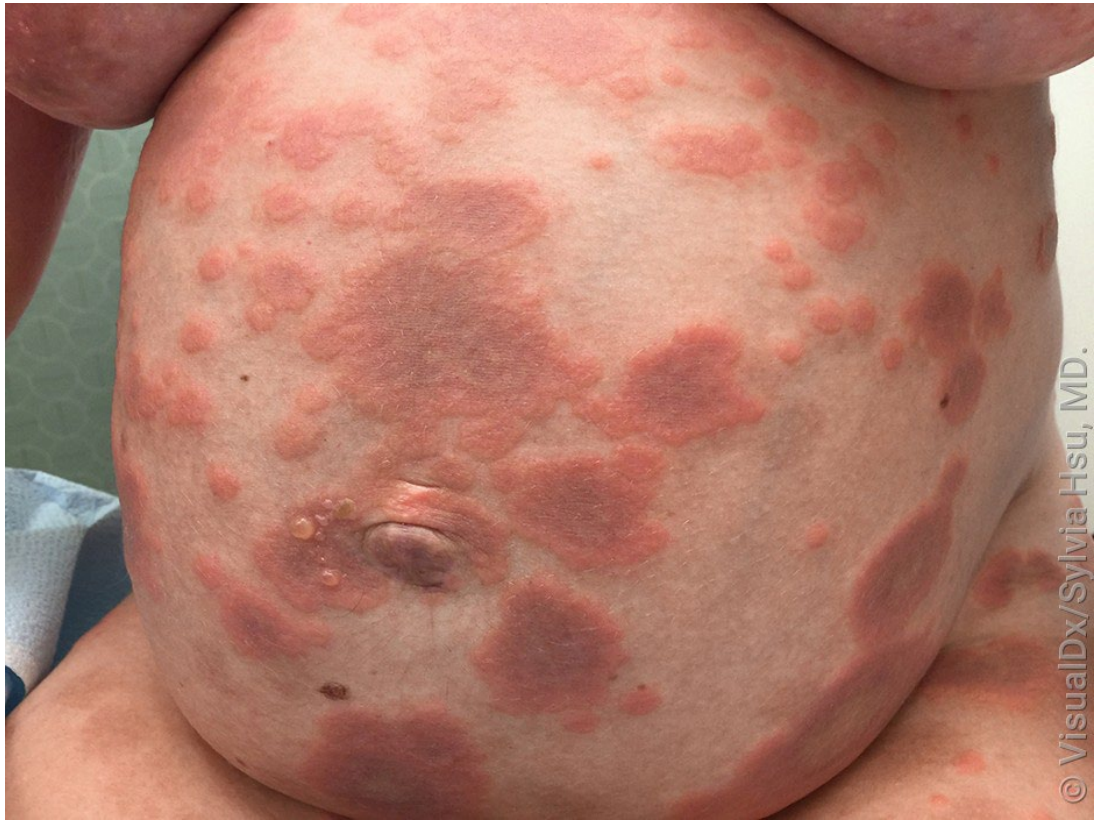
- Maternal dietary antigen avoidance not recommended
- Diets rich in fruits and vegetables, fish, and vitamin D possibly helpful
- Possibly probiotics but heterogeneity of results
- Regular alcohol consumption during pregnancy has been shown to carry an increased risk of AD in the children

Balakirski G, Novak N. Atopic dermatitis and pregnancy. J Allergy Clin Immunol. 2022 Apr;149(4):1185-1194.

33 y/o Primigravida, 37-Week Gestation

- 3-week history of itchy rash

- What do you think?
  - A. Atopic eruption of pregnancy
  - B. Intrahepatic cholestasis of pregnancy
  - C. Polymorphic eruption of pregnancy
  - D. Pemphigoid gestationis



Pemphigoid Gestationis

- Synonyms
  - Herpes gestationis
  - Gestational pemphigoid

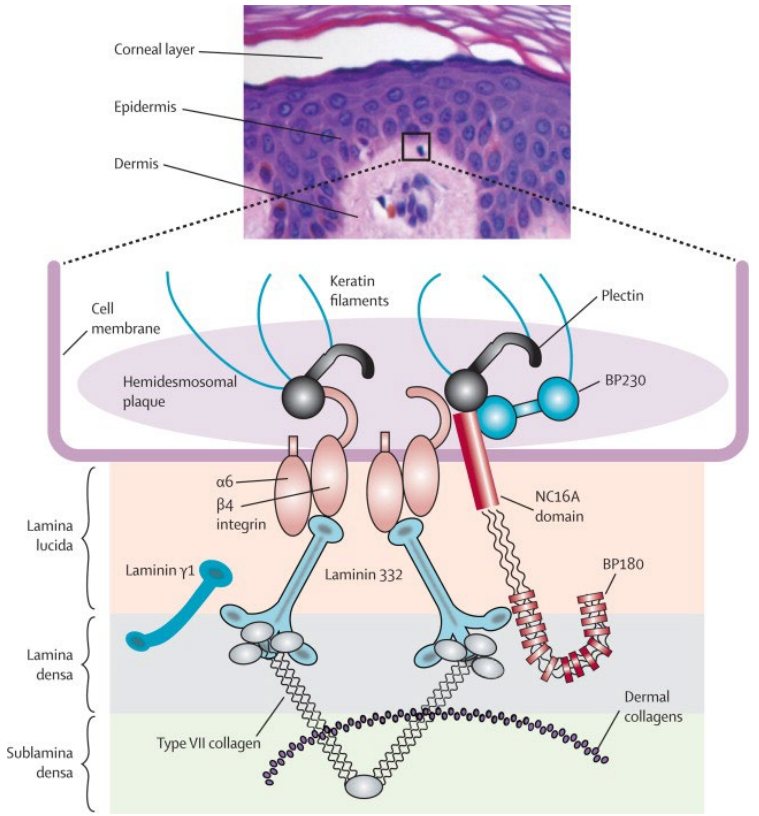
- 1 in 20,000 to 50,000 pregnancies

- Typically occurs in the 2nd or 3rd trimester

- Genetic component – increased in those with HLA-DR3 and HLA-DR4

Pemphigoid Gestationis - Pathogenesis

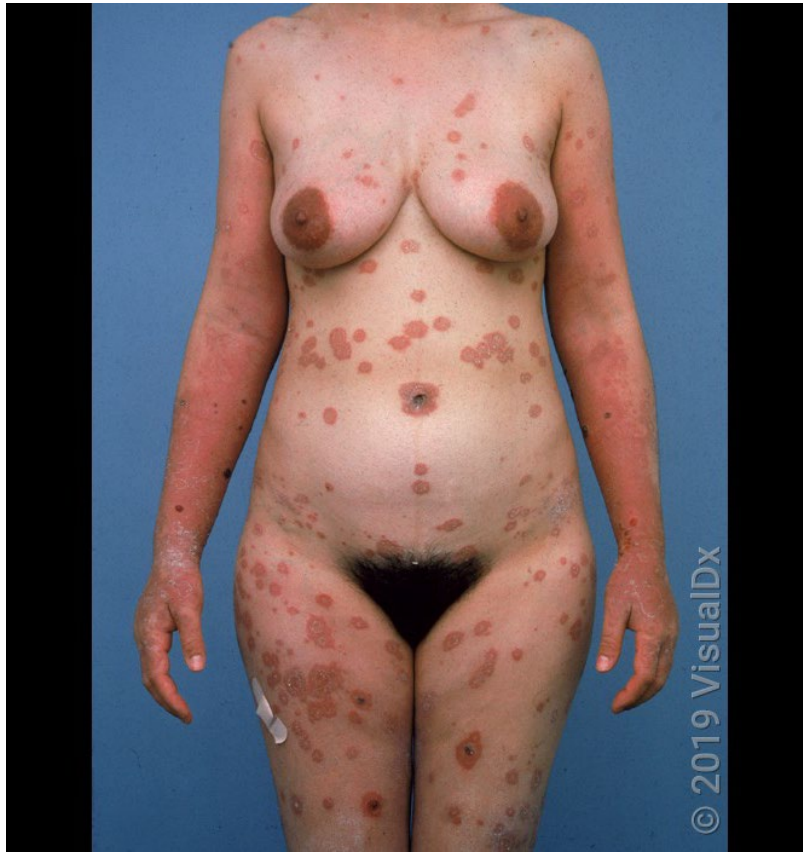
- Pemphigoid gestationis is characterized by autoantibodies against BP180 (BPAg2 or collagen XVII)
  - Possible aberrant expression of paternal MHC class II antigens on the placenta initiates production of antibodies against placental basement membrane zone antigens, which then cross-react with skin



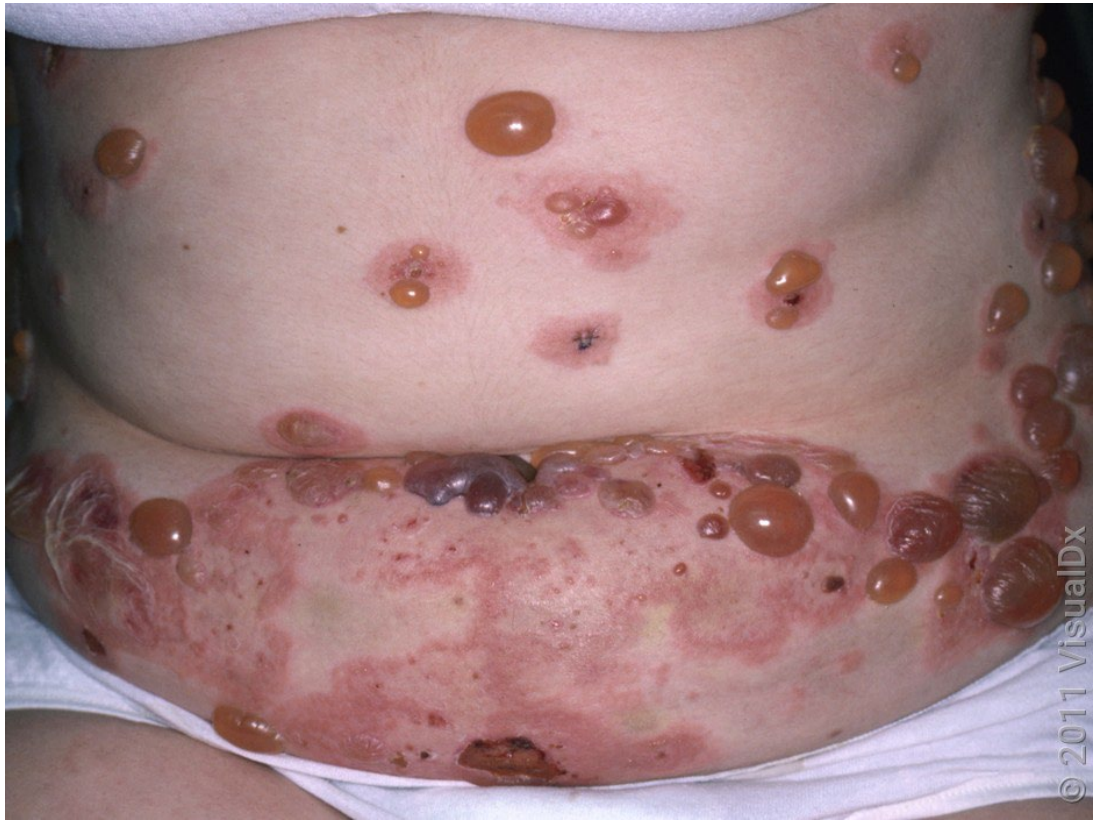
Schmidt E, Zillikens D. Pemphigoid diseases. Lancet. 2013 Jan 26;381(9863):320-32

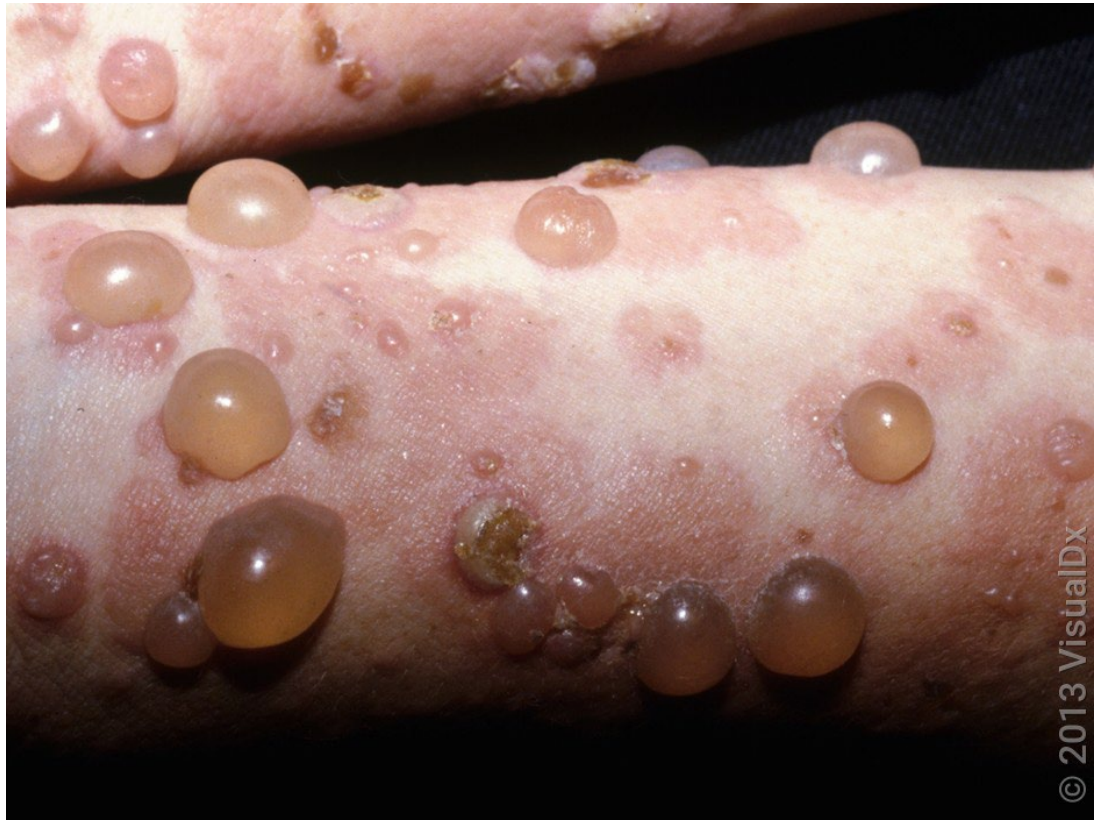
Pemphigoid Gestationis - Clinical

- Typically occurs in the 2nd or 3rd trimester - 25% postpartum
- Pruritic urticarial plaques, papules or vesicles often **in periumbilical region** before spreading, forming bullae
- Typically, face and mucous membranes spared

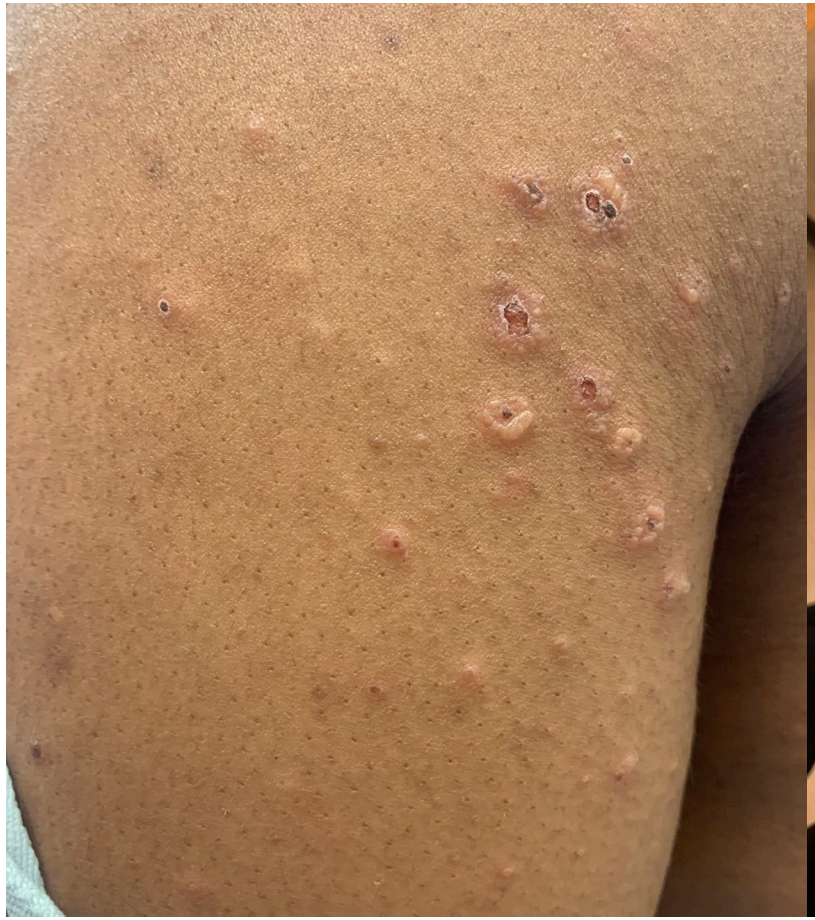


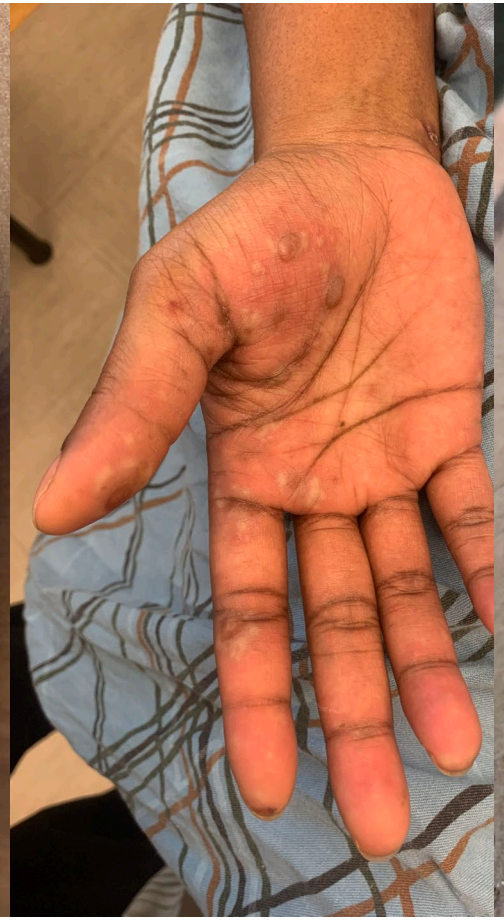
Pemphigoid Gestationis - Clinical

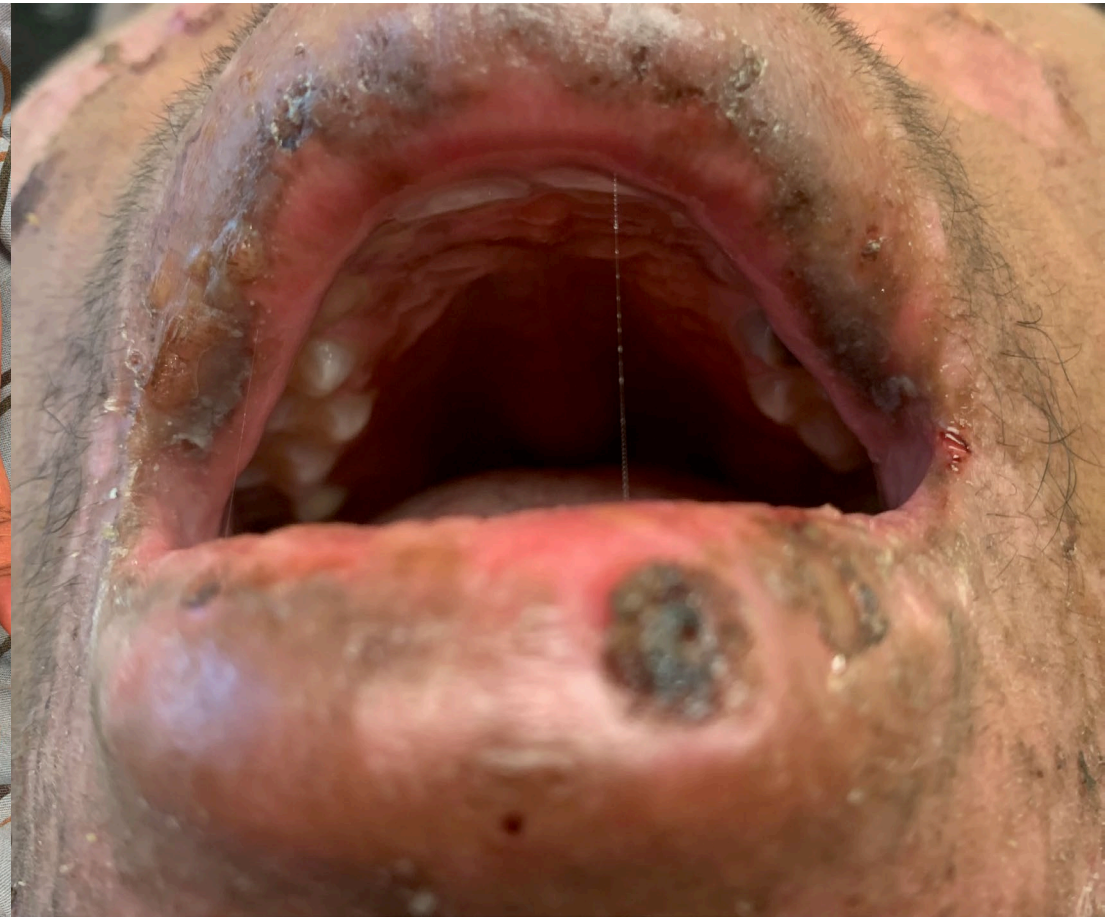




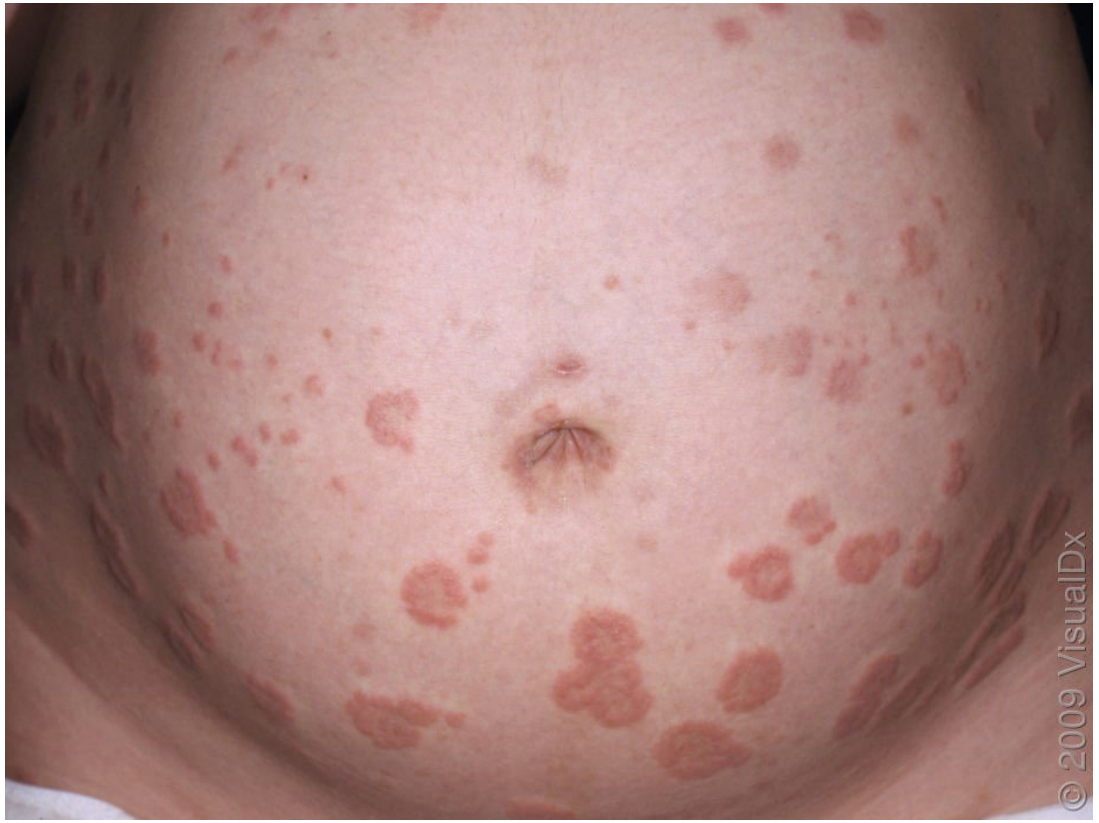
Pemphigoid Gestationis - Clinical

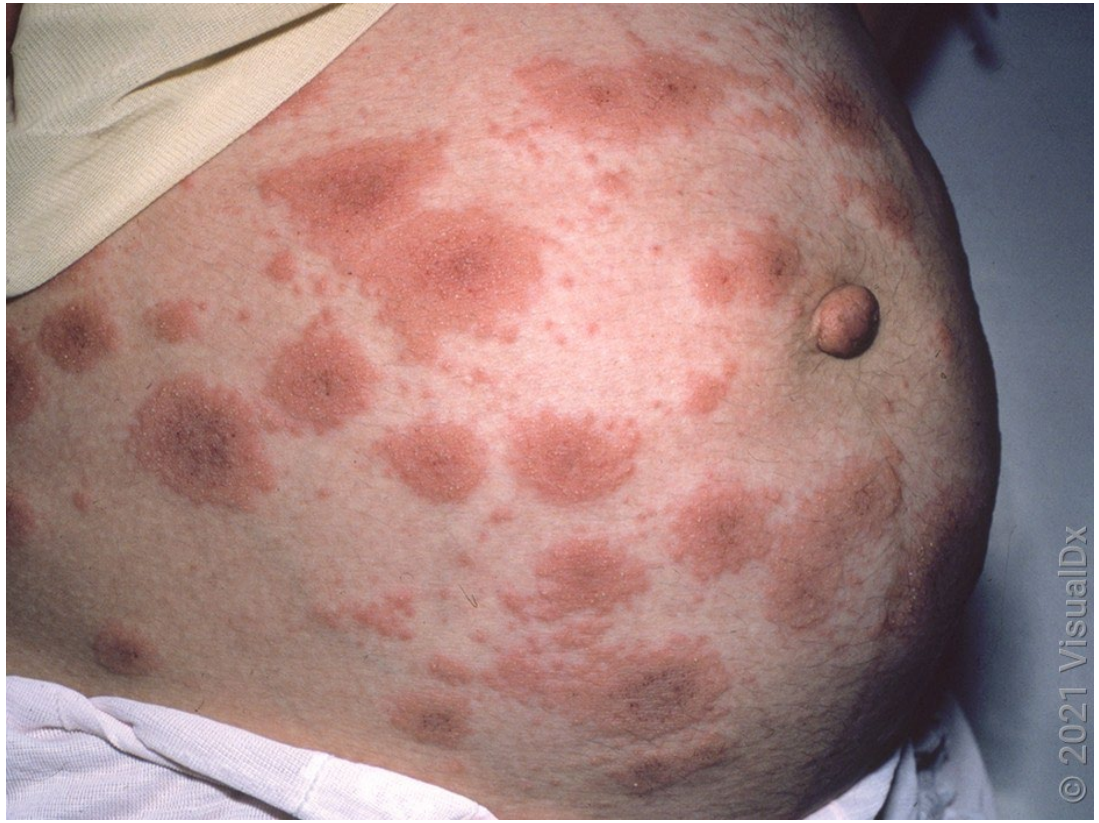






Pemphigoid Gestationis - Clinical





Which of the following is the pathognomonic feature of pemphigoid gestationis?

(a) Elevated bile acids

(b) Linear deposition of complement 3 near the basementmembrane zone visualized using direct immunofluorescence

(c) Subepidermal vesicles with perivascular lymphocytic and eosinophilic infiltrate

(d) Basal cell necrosis and edema of the dermal papillae

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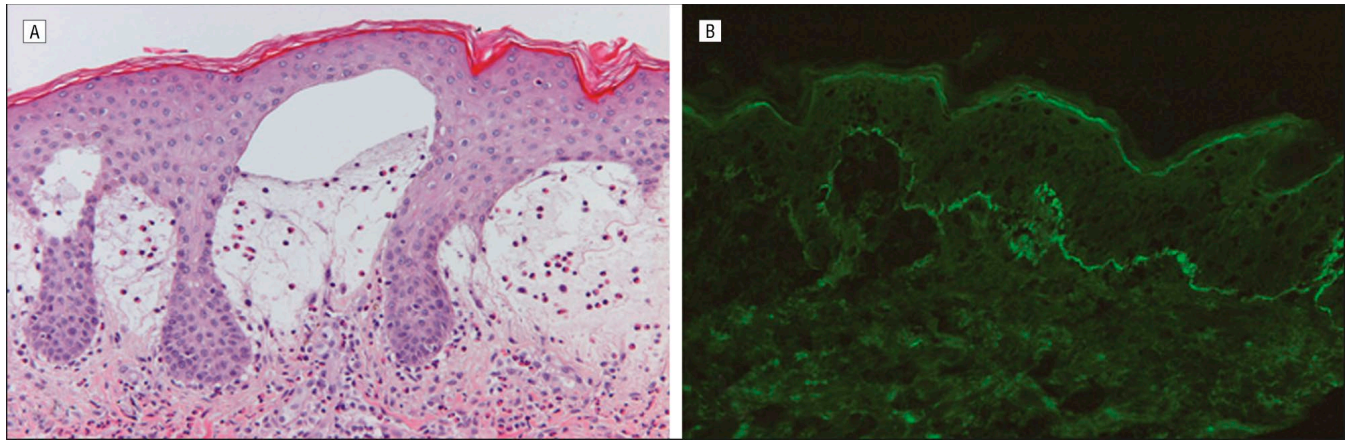
(d) Basal cell necrosis and edema of the dermal papillae

Pemphigoid Gestationis

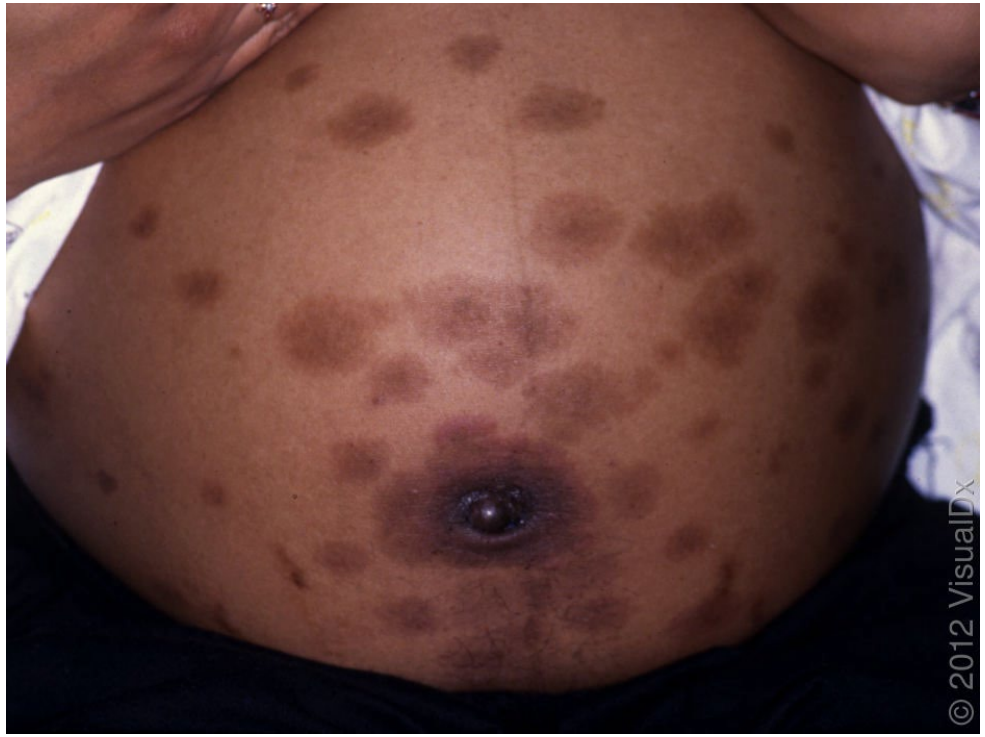
- Diagnosis
  - Biopsy - helpful
  - Direct immunofluorescence
    - C3 along DEJ (100%)
    - IgG along DEJ (25- 50%)
  - Indirect immunofluorescence - ELISA



Aoyama Y, Asai K, Hioki K, Funato M, Kondo N, Kitajima Y. Herpes Gestationis in a Mother and Newborn: Immunoclinical Perspectives Based on a Weekly Follow-up of the Enzyme-Linked Immunosorbent Assay Index of a Bullous Pemphigoid Antigen Noncollagenous Domain. *Arch Dermatol.* 2007;143(9):1168–1172.

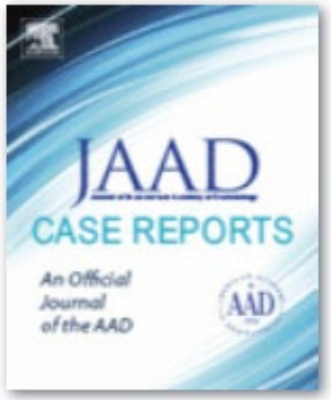
Pemphigoid Gestationis

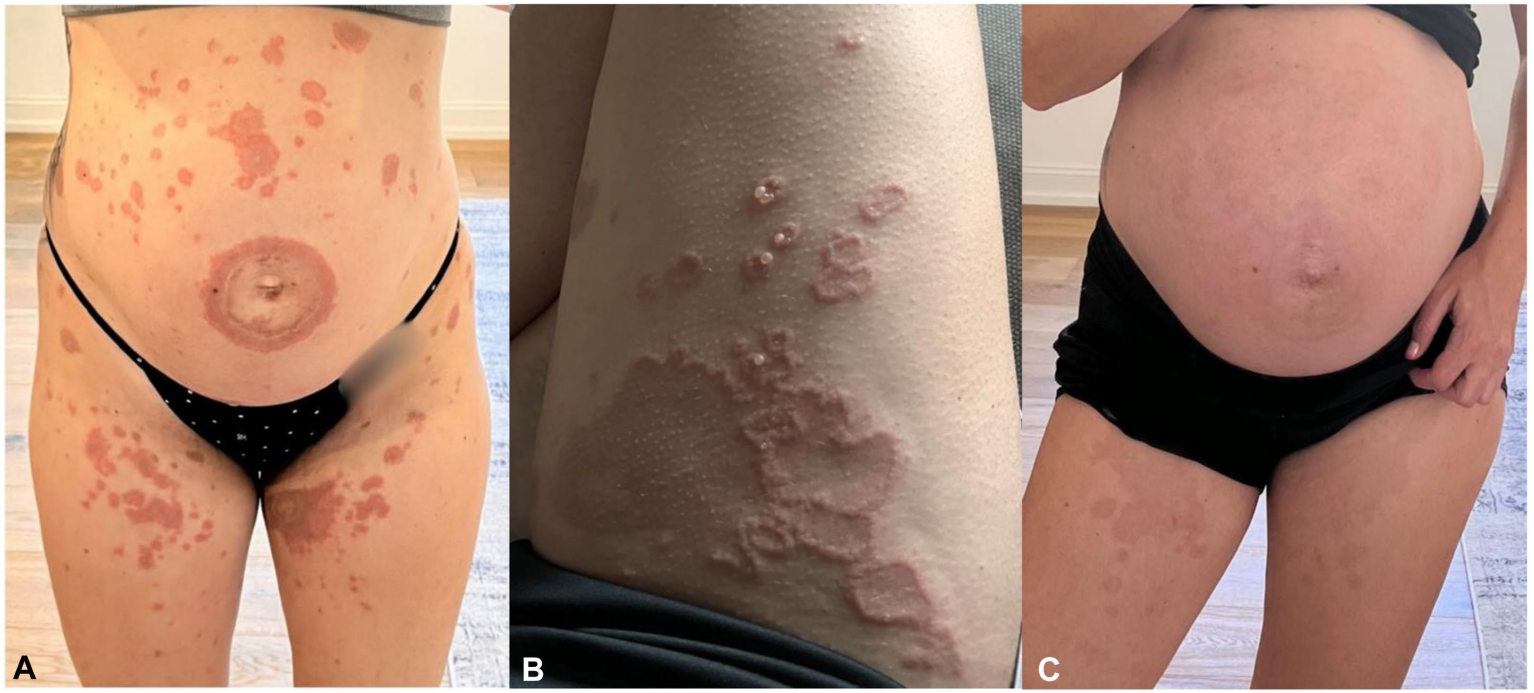
- Treatment
  - High potency topical steroids
  - Systemic steroids
  - Consider increasing near due date if postpartum flare anticipated
  - Postpartum flares triggered by OCP or menses



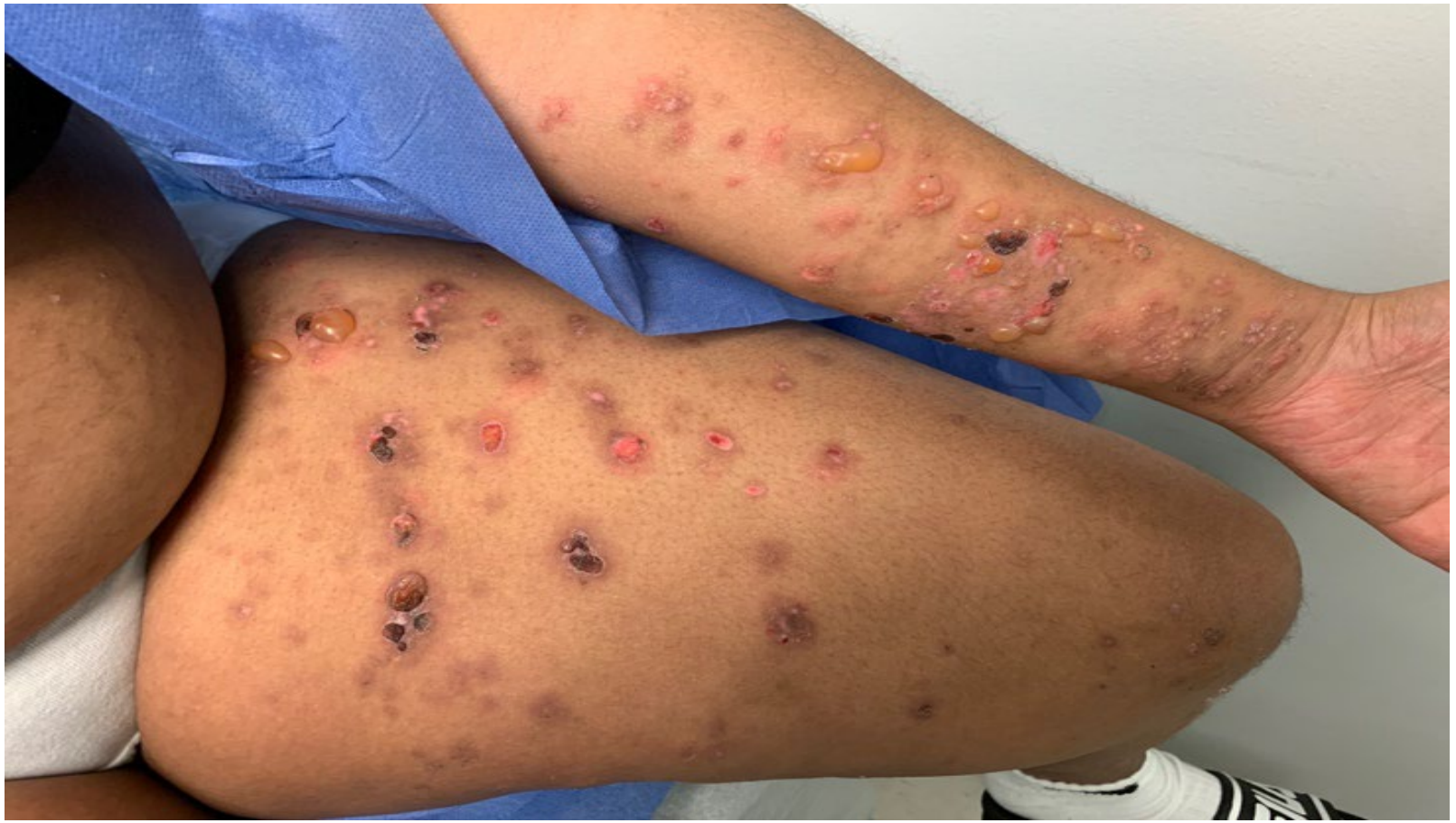
Pemphigoid Gestationis

Dupilumab as a novel steroid-sparing treatment for pemphigoid gestationis: A new case report and review of literature
JAAD Case Reports
Phong, Celine H.; Lee, Bonnie A.; Grando, Sergei A.
Vol. 60, pp. 37–40, 2025.





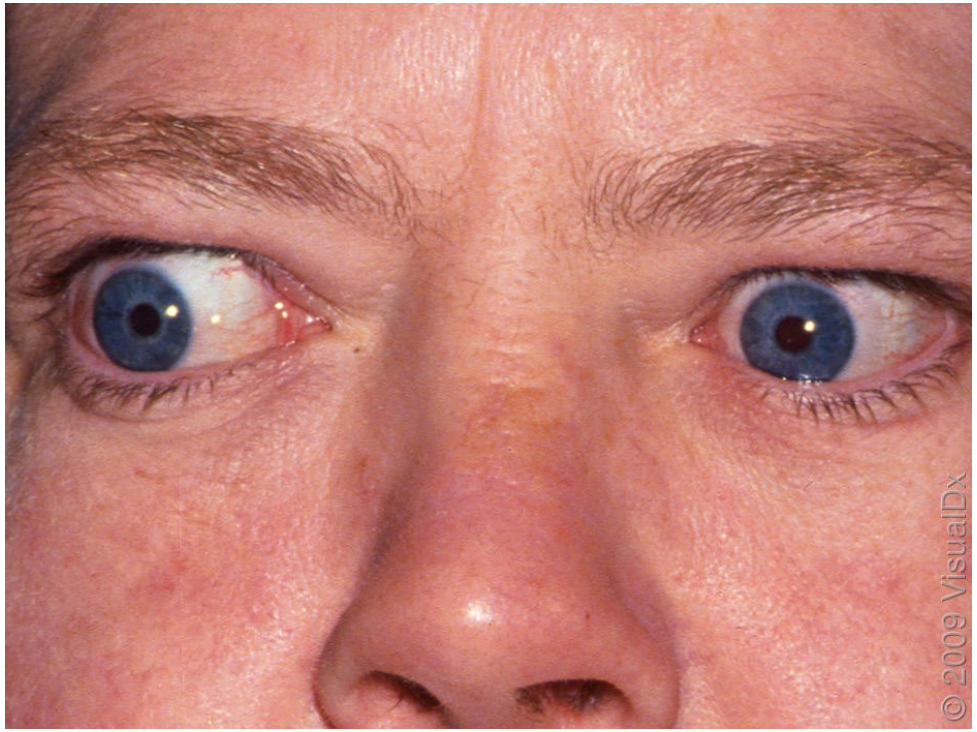
Interesting Case



Wheless, M., Zelickson, B., Patel, T., & Jones, A. (2020). Oral Contraception Inducing Bullous Pemphigoid in an Adolescent. *SKIN The Journal of Cutaneous Medicine, 4*(2), 177-179. doi:https://doi.org/10.25251/skin.4.2.16

Pemphigoid Gestationis

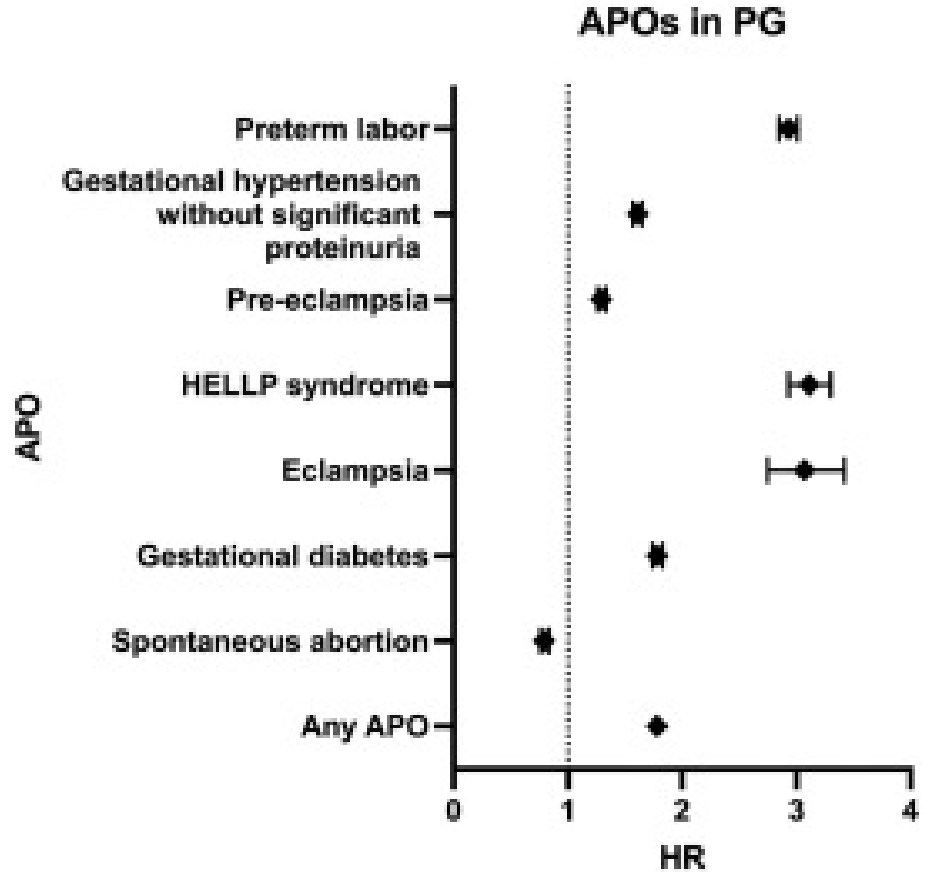
- Maternal Risk
  - Long-term increased risk of autoimmune diseases – esp Graves's disease



Pemphigoid Gestationis

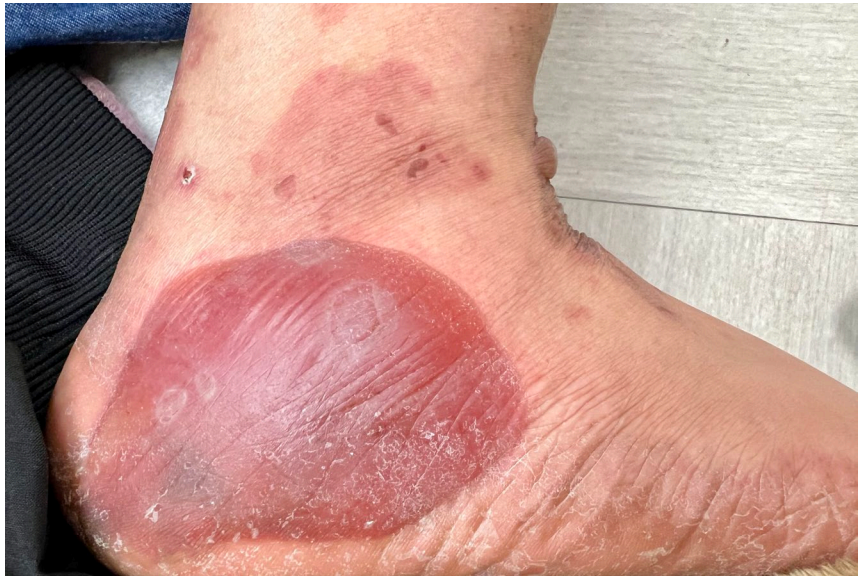
- Maternal Risk

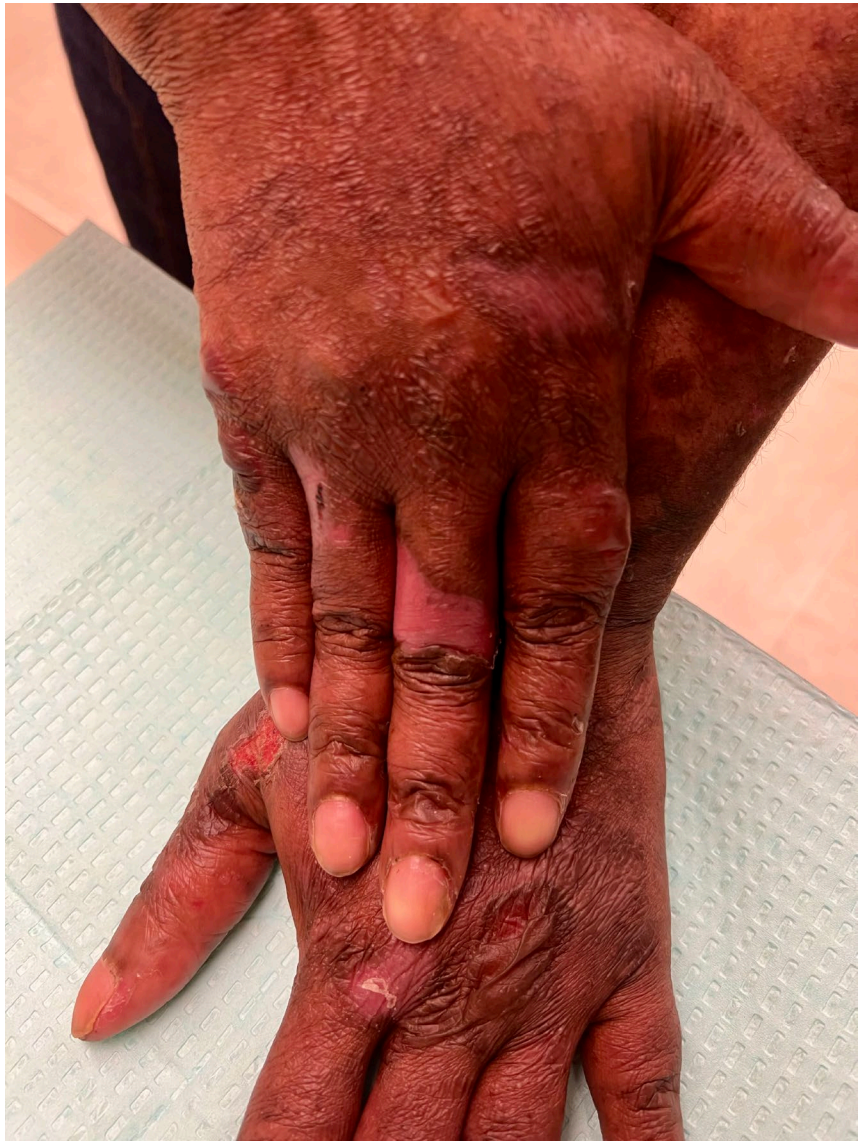
Pemphigoid gestationis is associated with an increased risk for adverse pregnancy outcomes: A large-scale propensity-matched retrospective cohort study
Journal of the American Academy of Dermatology (JAAD)
Preuß, Sophie L.; Vorobyev, Artem; Moderegger, Eva ...
Vol. 91 Issue 4, pp. 748–750, 2024.



Pemphigoid Gestationis

- Recurrence
  - Maternal recurrence likely (8% “skip” pregnancies), often earlier onset and greater severity





Pemphigoid Gestationis

- Fetal Risk
  - Preterm birth, low birthweight
  - Neonatal pemphigoid gestationis (10%)

Pemphigoid gestationis: early onset and blister formation are associated with adverse pregnancy outcomes
British Journal of Dermatology
Chi, C-C.; Wang, S-H.; Charles-Holmes, R.; Ambros-R...
Vol. 160 Issue 6, pp. 1222–1228, 2009.

Volume 160, Issue 6
1 June 2009

From: **Herpes Gestationis in a Mother and Newborn: Immunoclinical Perspectives Based on a Weekly Follow-up of the Enzyme-Linked Immunosorbent Assay Index of a Bullous Pemphigoid Antigen Noncollagenous Domain**

Arch Dermatol. 2007;143(9):1168-1172. doi:10.1001/archderm.143.9.1168

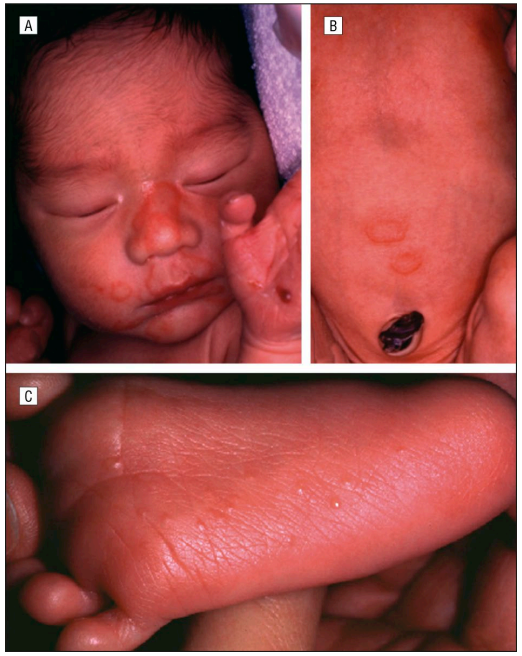


Figure Legend:

Annular erythematous-edematous lesions on the face (A) and abdomen (B) and vesicles on the soles (C) of the neonate.

From: **Herpes Gestationis in a Mother and Newborn: Immunoclinical Perspectives Based on a Weekly Follow-up of the Enzyme-Linked Immunosorbent Assay Index of a Bullous Pemphigoid Antigen Noncollagenous Domain**

Arch Dermatol. 2007;143(9):1168-1172. doi:10.1001/archderm.143.9.1168

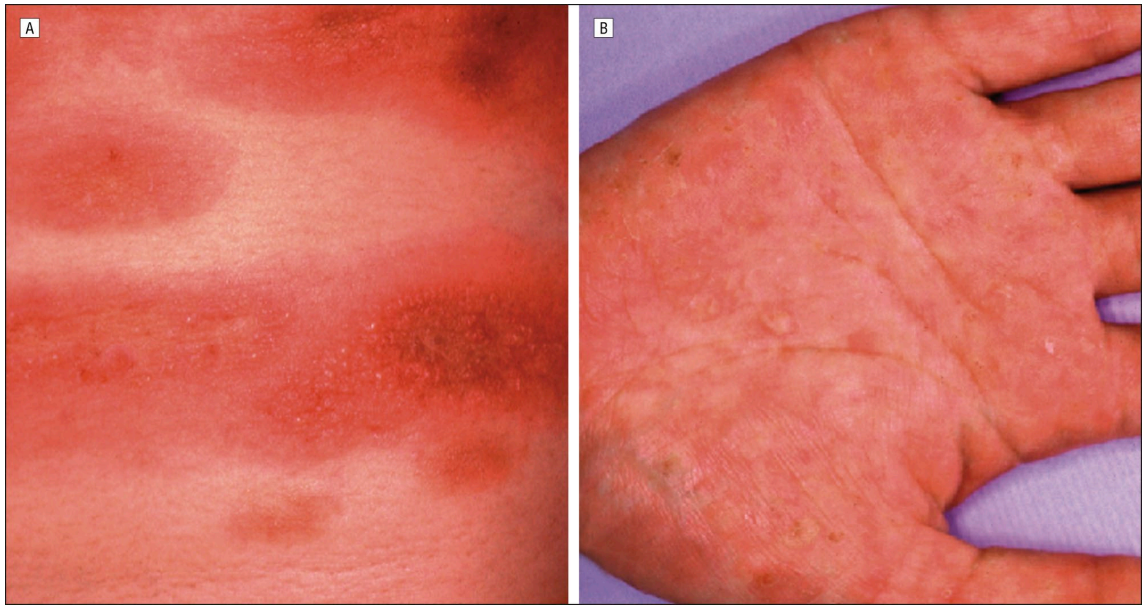


Figure Legend:

Exudative and erythematous lesions with clusters of vesicles on the abdomen (A) and vesicles on the palm (B) of the mother.

From: **Herpes Gestationis in a Mother and Newborn: Immunoclinical Perspectives Based on a Weekly Follow-up of the Enzyme-Linked Immunosorbent Assay Index of a Bullous Pemphigoid Antigen Noncollagenous Domain**

Arch Dermatol. 2007;143(9):1168-1172. doi:10.1001/archderm.143.9.1168

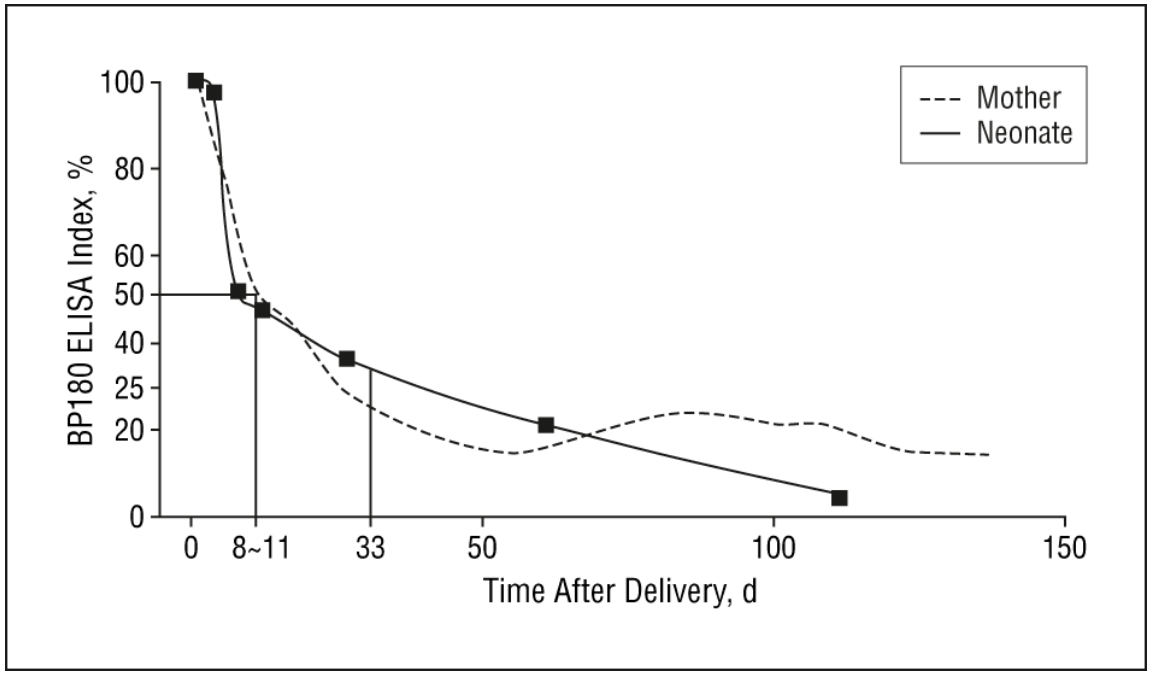
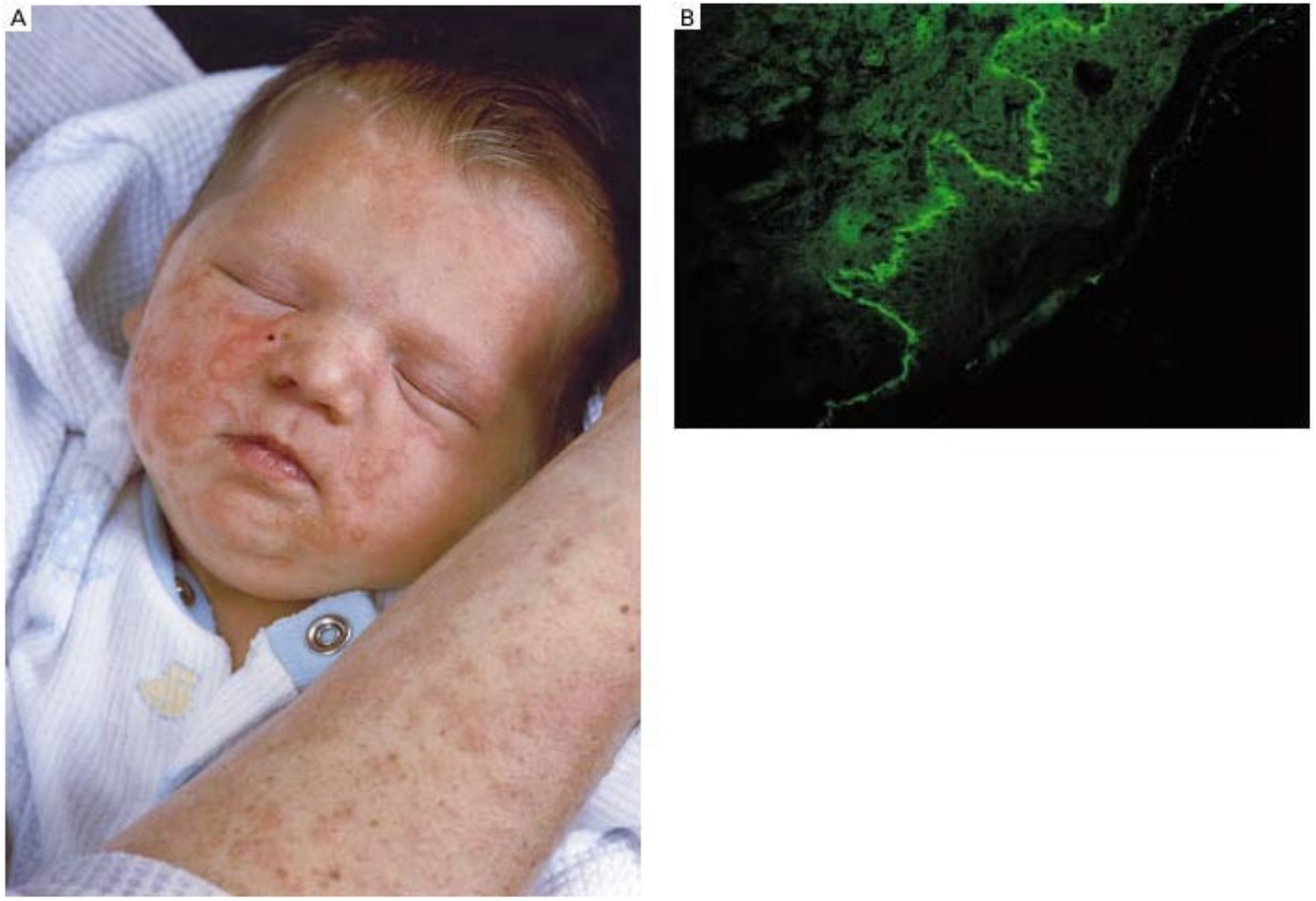


Figure Legend:

Elimination curve of the 180-kDa bullous pemphigoid (BP180) enzyme-linked immunosorbent assay (ELISA) index for mother and neonate. Starting points for the ELISA index of the mother (2955) and neonate (1154) were normalized as 100%. The elimination half-life of anti-BP180 antibody is initially approximately 15 days in mother and neonate in the first 33 days after delivery.

Neonatal Rash Due to Herpes Gestationis

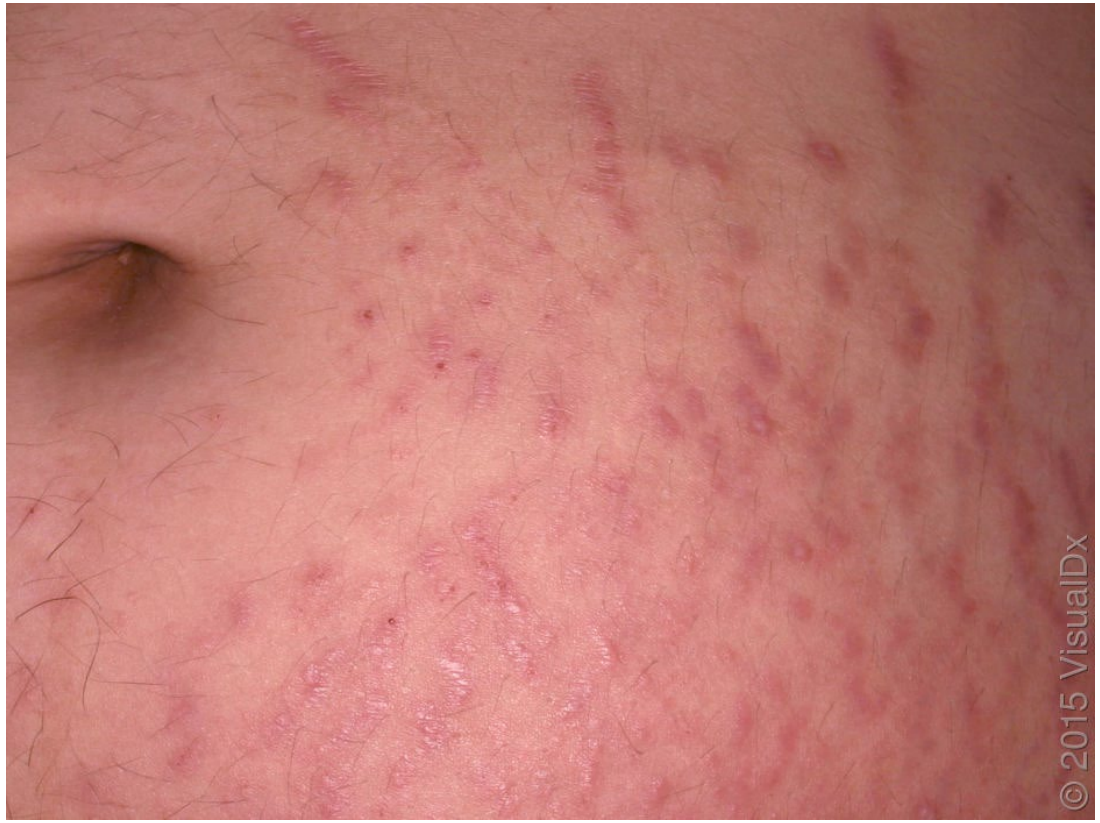


Erickson NI, Ellis RL. N Engl J Med 2002;347:660-660.

29-year-old G1P0 patient

- Third trimester with severe pruritus and a skin eruption that began on the trunk before spreading to her arms and thighs.

- Which of the following is the most likely diagnosis?
  - (a) Pemphigoid gestationis
  - (b) Polymorphous eruption of pregnancy
  - (c) Atopic eruption of pregnancy
  - (d) Pustular psoriasis of pregnancy

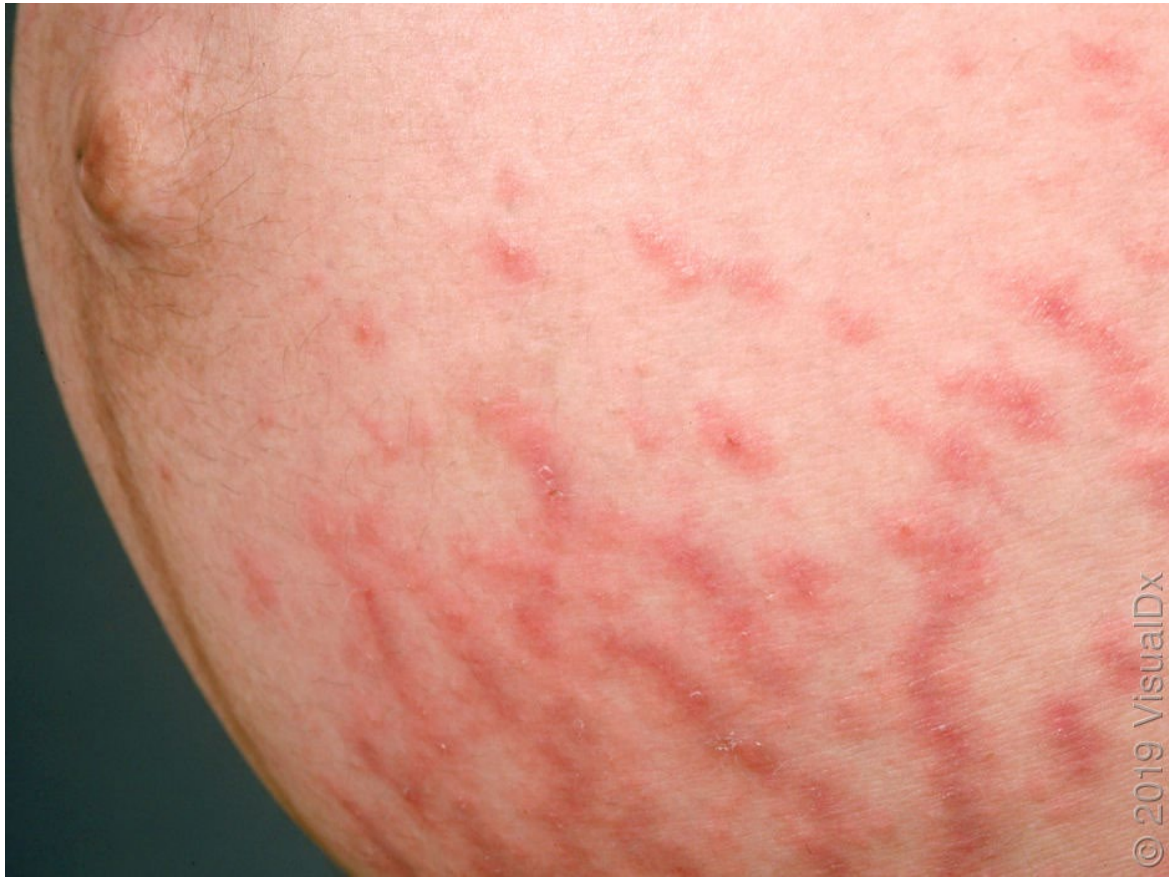


Polymorphous Eruption of Pregnancy

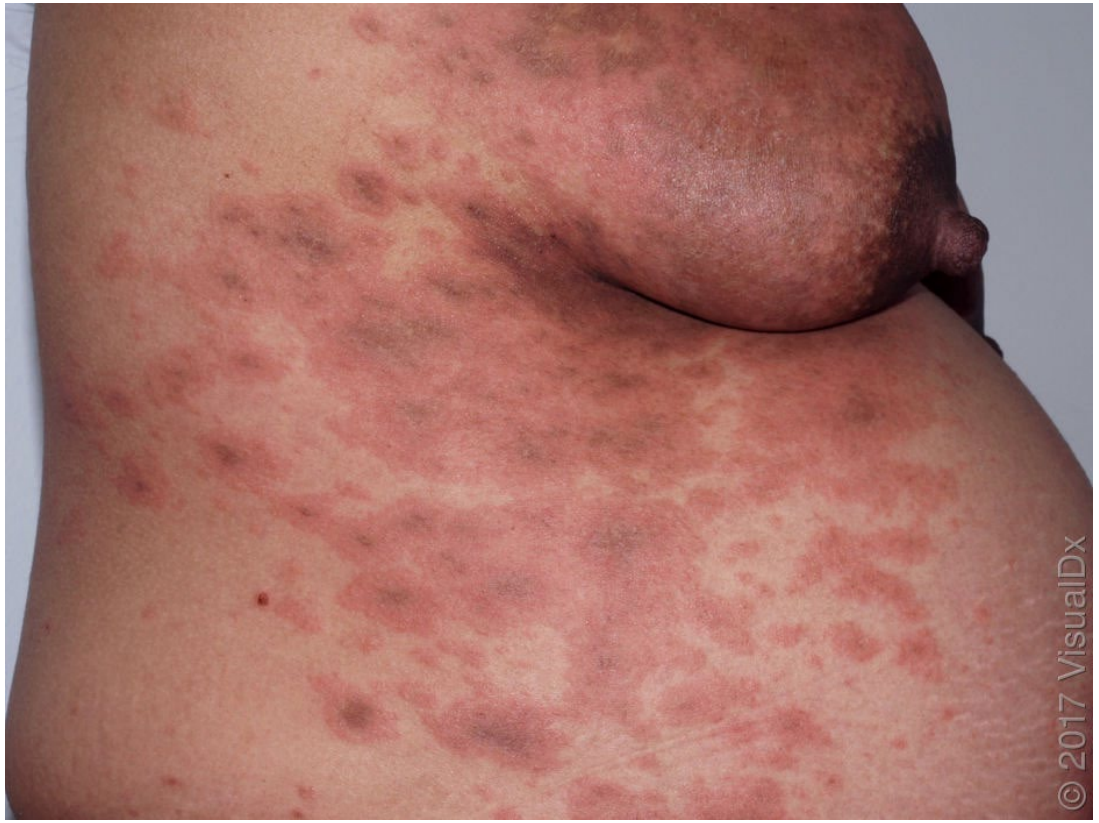
- Synonyms
  - Pruritic urticarial papules and plaques of pregnancy (PUPP)
  - Toxic erythema of pregnancy
  - Toxemic rash of pregnancy
  - Late-onset prurigo of pregnancy
- Second most common dermatosis of pregnancy
- Usually develops late in 3rd trimester
- Pathogenesis unclear
  - ? Late abdominal distension, connective tissue damage and immune response

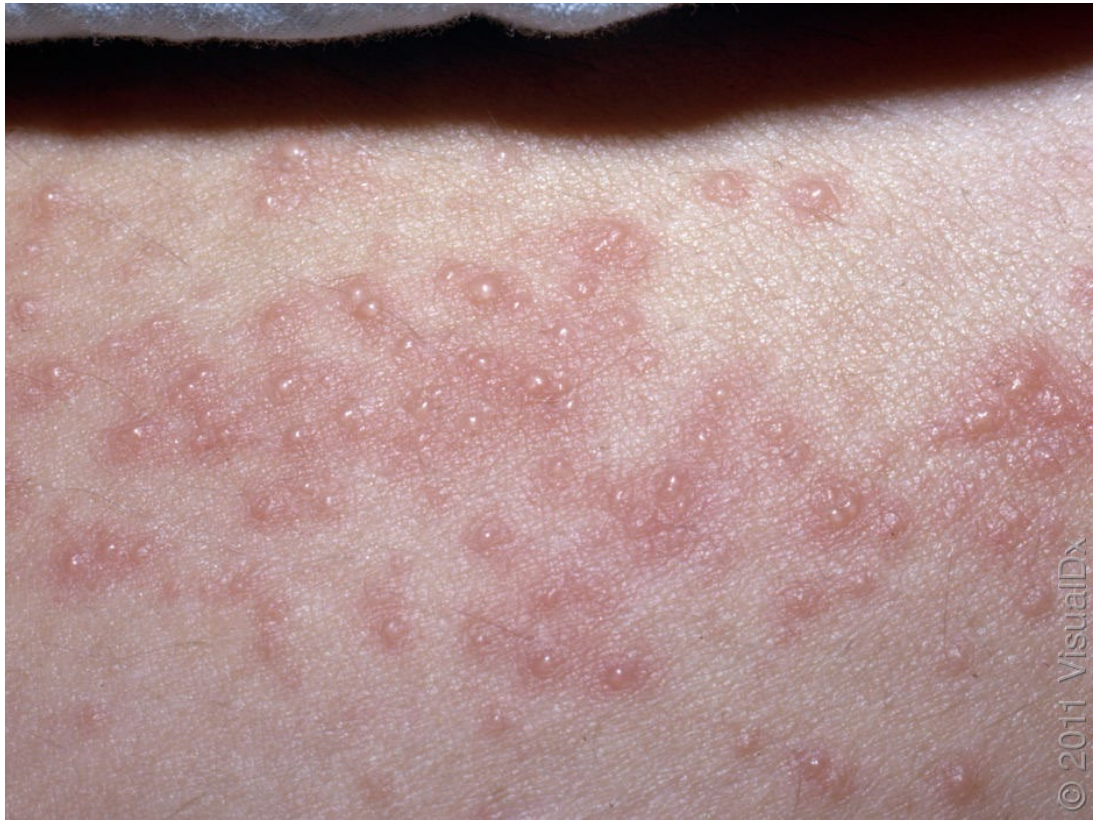
Polymorphous Eruption of Pregnancy

- Typically in primigravidas or multiple gestation pregnancies
- Pruritic eruption **within abdominal striae sparing umbilicus**, spreading to the breasts, arms, or thighs over days
- Variable morphology of lesions: urticarial plaques and papules, vesicles, targetoid, polycyclic, eczematous plaques

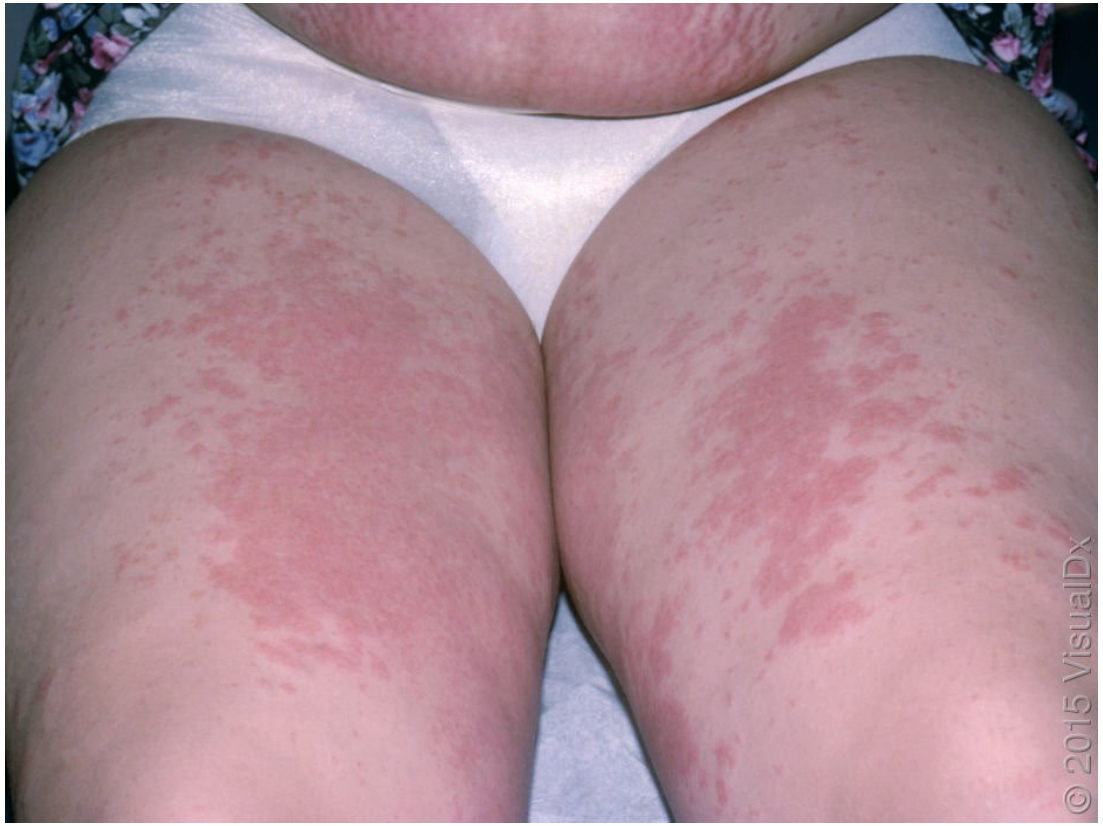


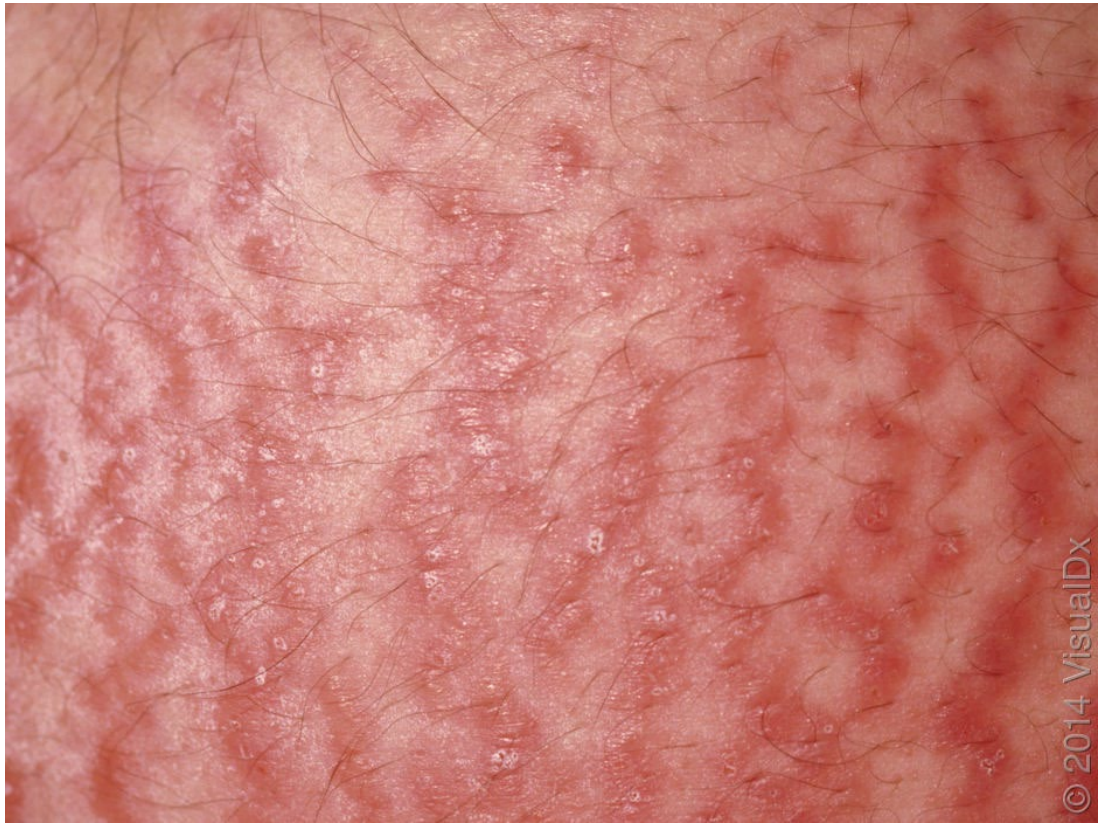
Polymorphous Eruption of Pregnancy - Clinical





Polymorphous Eruption of Pregnancy - Clinical

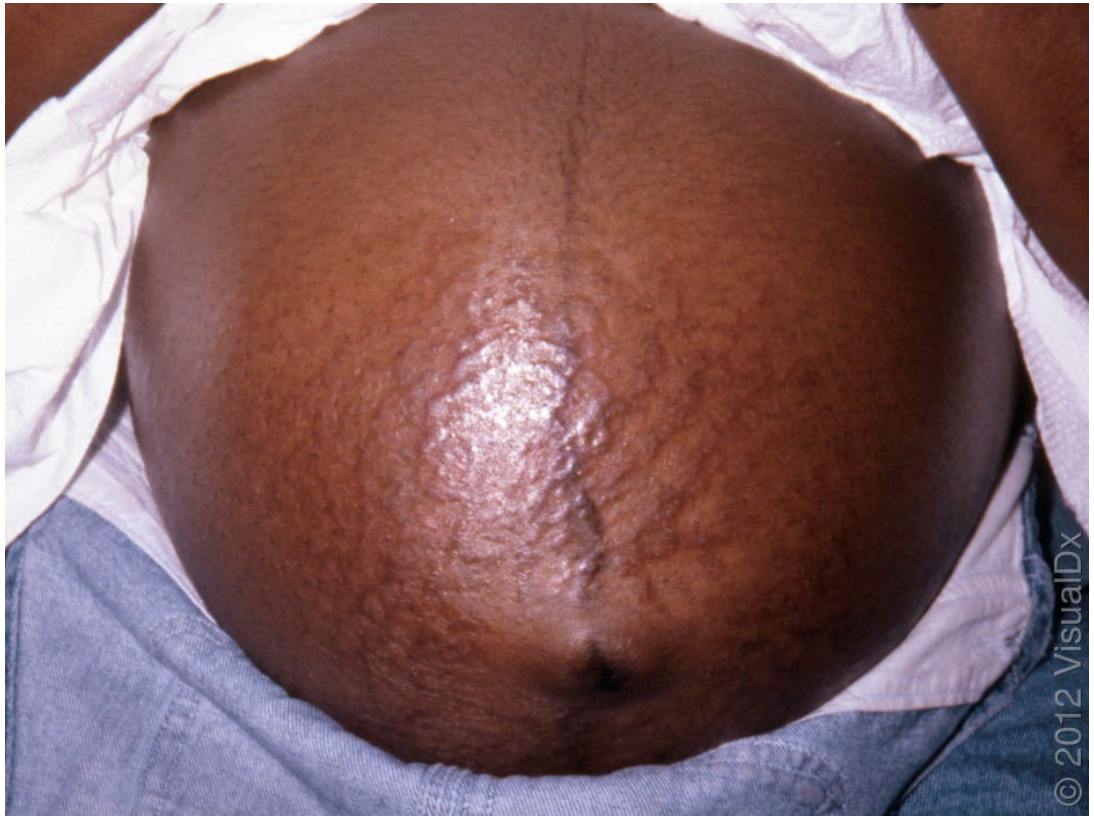




Polymorphous Eruption of Pregnancy

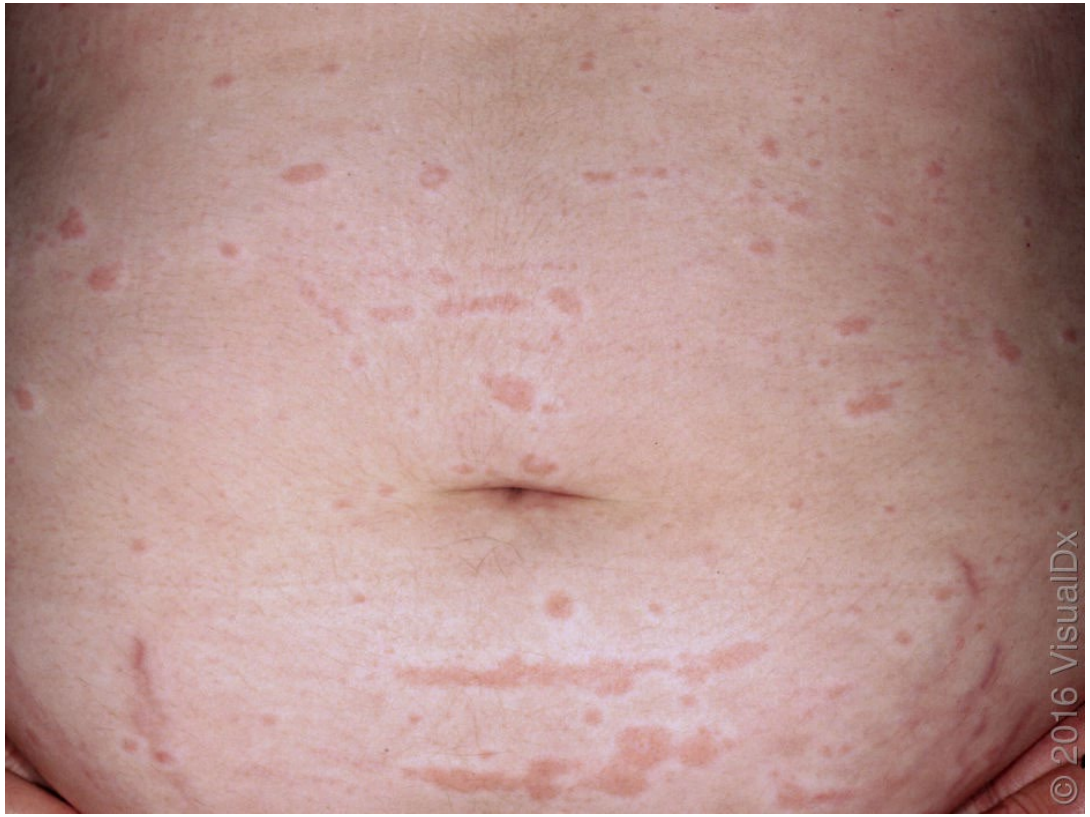
- Diagnosis
  - Clinical
  - Biopsy for histology if uncertain
    - Correlates with morphology
    - Rule out PG
  - Direct immunofluorescence

- Treatment
  - Topical steroids
  - Systemic steroids if severe



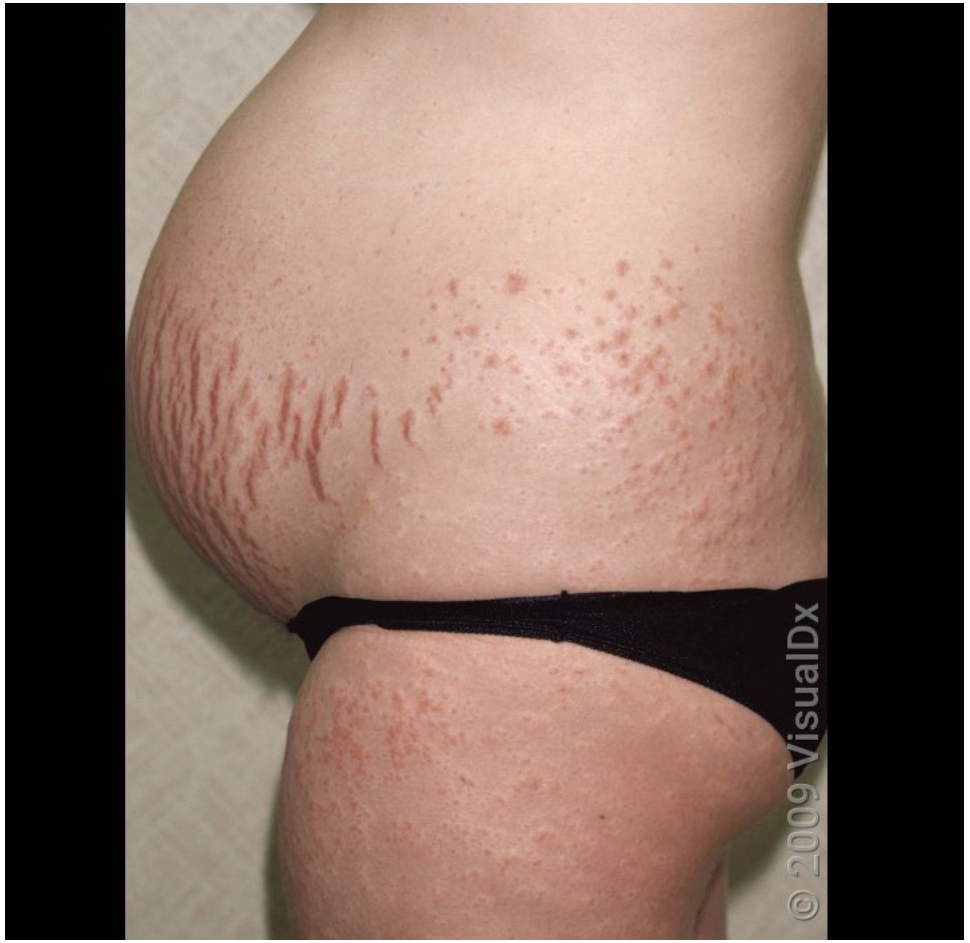
Polymorphous Eruption of Pregnancy

- Urticaria
  - Can mimic Polymorphous Eruption of Pregnancy



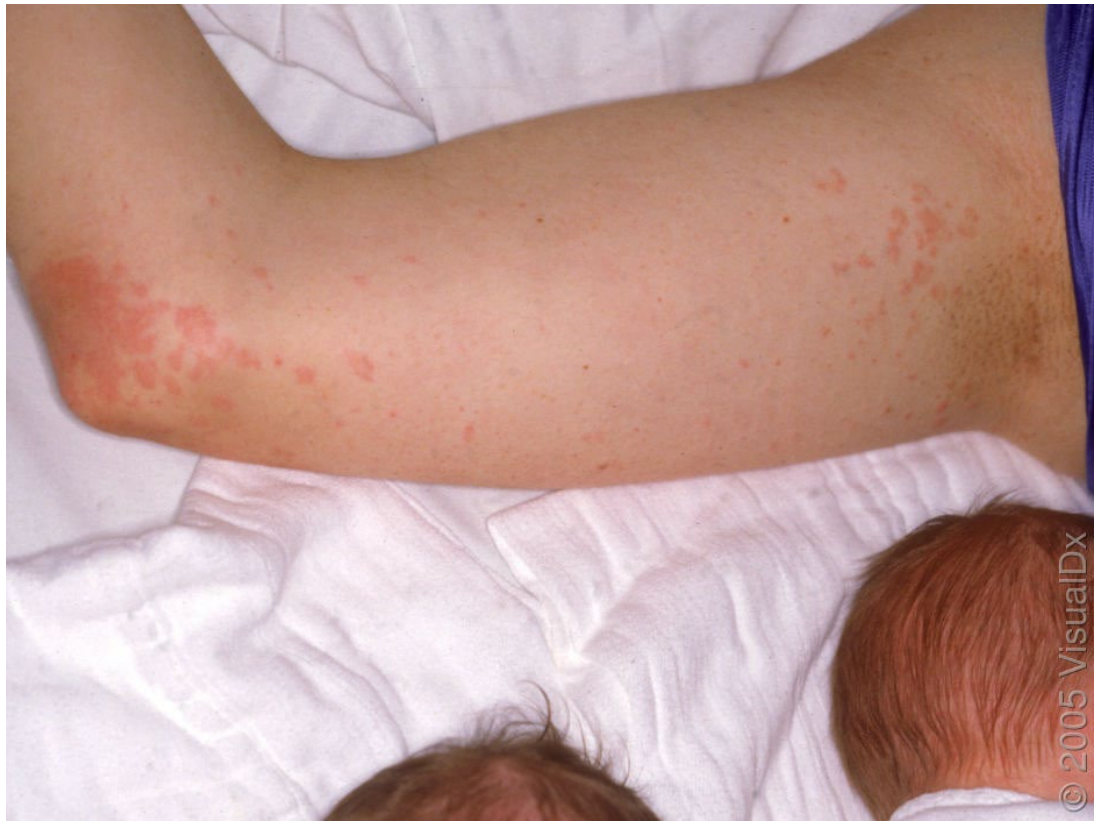
Polymorphous Eruption of Pregnancy

- So, should we be worried about maternal or fetal risks?



Polymorphous Eruption of Pregnancy

- Maternal Risk
  - None, possible increased risk of C-section
- Fetal Risk
  - None
- Recurrence
  - Rare, some cases of multigestation pregnancy

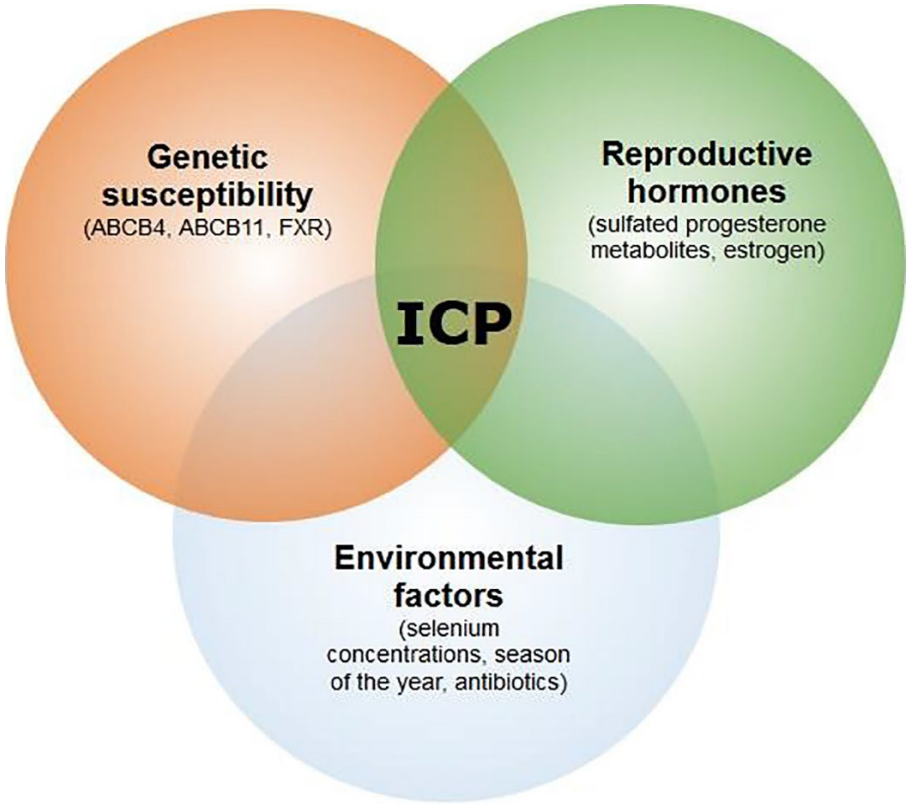


Intrahepatic Cholestasis of Pregnancy

- Synonyms
  - Obstetric cholestasis
  - Prurigo gravidarum
  - Cholestatic jaundice of pregnancy
  - Idiopathic jaundice of pregnancy
  - Icterus gravidarum
- 70 in 10,000 pregnancies in US
  - Varies among geographic locations
- First or subsequent pregnancies
- Usually develops in 3rd trimester

Intrahepatic Cholestasis of Pregnancy

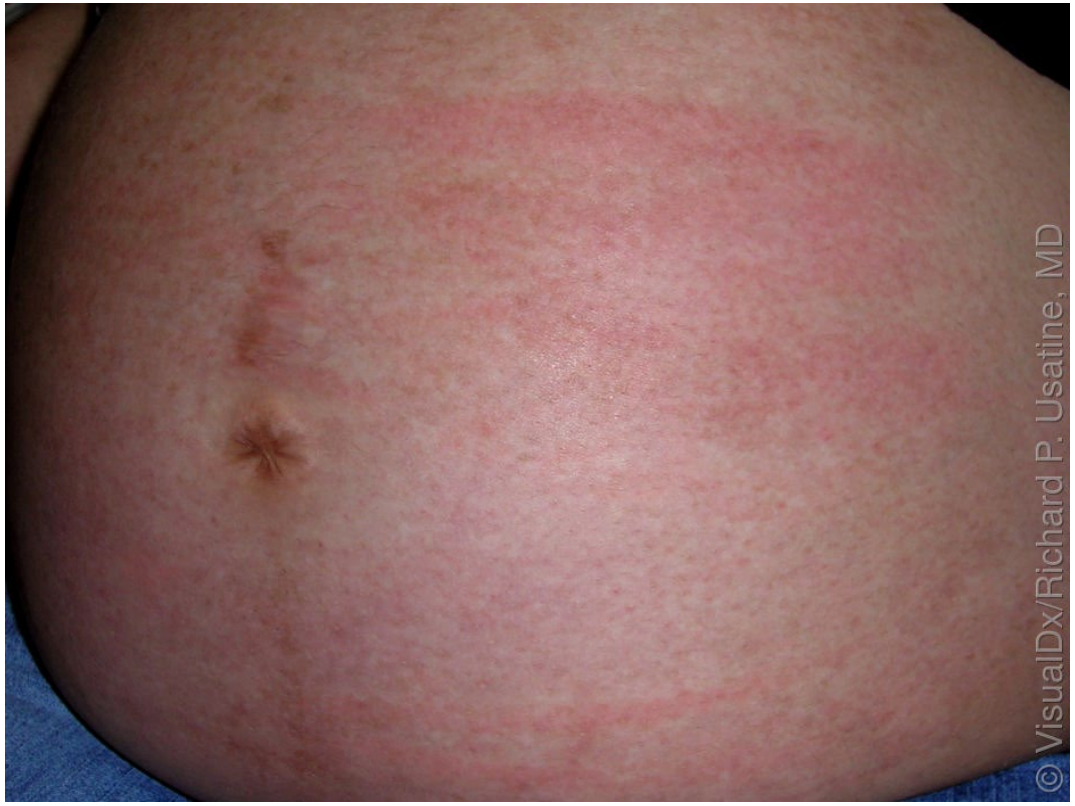
- Pathogenesis
  - Genetics component
    - More common is 1st degree relatives,
    - Familial clustering
    - Mutations in bile acid transporter, receptors and pumps
  - Hormones
    - Increased levels of estrogen/progesterone
  - Environment
    - Selenium deficiency/low Vit D
    - Low in winter



Pataia V, Dixon PH, Williamson C. Pregnancy and bile acid disorders. Am J Physiol Gastrointest Liver Physiol. 2017 Jul 1;313(1):G1-G6.

Intrahepatic Cholestasis of Pregnancy

- Late, 3rd trimester
- Pruritus, severe hands/feet, night
- No primary lesion
- Excoriations
- Prurigo nodules



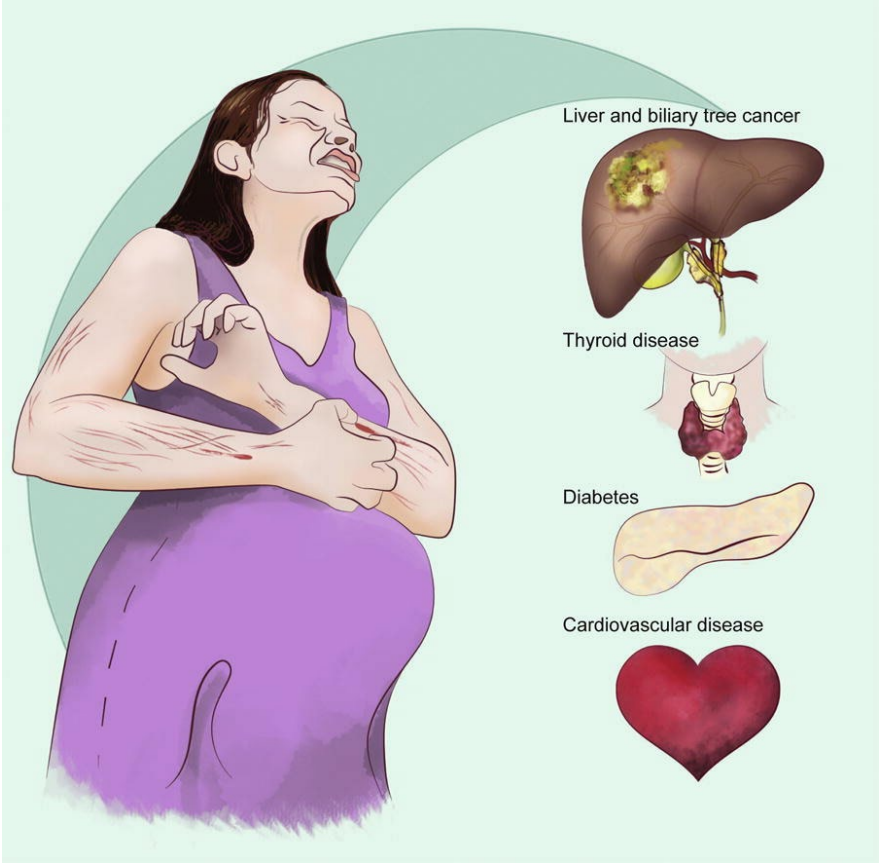
Intrahepatic Cholestasis of Pregnancy

- Diagnosis
  - Fasting serum bile acids > 11 µmol/L
    - Pruritus can proceed
  - Increased transaminases
  - Jaundice (10%)
- Treatment
  - Resolve with delivery
  - Ursodeoxyxcholic acid

Laboratory tests	Normal pregnancy	Intrahepatic cholestasis of pregnancy
Total serum bile acids	slightly elevated (6.6±0.3µmol/l, up to 11µmol/l accepted as normal)	elevated (>11µmol/l)
Alanine transaminase (ALT)	normal	elevated (in 20-60% of cases, with 2-10-fold rises)
Alkaline phosphatase (ALP)	normal	elevated
γ-GT	lower	normal/slightly elevated (in 30% of cases)
Albumin	normal	slightly lower
α2-globulins	normal	moderately elevated
β-globulins	normal	very elevated
LDL-cholesterol, triglycerides	normal	elevated
HDL- cholesterol	normal	slightly lower
Lipoprotein X (LpX)	absent	present
Bilirubinemia	normal	elevated (in 10-20% of cases)

Intrahepatic Cholestasis of Pregnancy

- So what are the maternal risks?
  - Increased risk of hemorrhage possibly due to malabsorption of vitamin K
  - Possible increased risk of
    - Hepatobiliary cancer
    - Chronic hepatitis, cirrhosis, cholethiasis
    - Immune-mediated disease
    - Cardiovascular diseases



Wikström Shemer EA, Stephansson O, Thuresson M, Thorsell M, Ludvigsson JF, Marschall HU. Intrahepatic cholestasis of pregnancy and cancer, immune-mediated and cardiovascular diseases: A population-based cohort study. J Hepatol. 2015 Aug;63(2):456-61.

Intrahepatic Cholestasis of Pregnancy

- Fetal Risk
  - Meconium staining
  - Premature labor
  - Respiratory fetal distress
  - Fetal death

Source	Fetal complications			
	Preterm delivery	Meconium-stained amniotic fluid	Respiratory distress syndrome	Intrauterine fetal death
Geenes et al. (2014) [13]	25%[a] Odds ratio (OR) 4.68, 95% confidence interval (CI) 3.67–5.98	16%[a]	–	1.5%[a] OR 3.05, 95% CI 1.29–7.21
Oztekin et al. (2009) [28]	11.7%	–	–	–
Zecca et al. (2006) [41]	–	–	28.6%	–
Lee et al. (2006) [21]	–	10.5%–12.5%	–	–
Glantz et al. (2004) [15]	2.2% in mild ICP[b] 16.7% in severe ICP[b]	44% in severe ICP[b]	–	0.4%
Bacq et al. (1997) [3]	60.0%	–	–	–

[a]Severe ICP cases defined as TBA ≥40 μmol/L.
[b]Mild ICP defined as TBA ≥10–39 μmol/L; severe ICP defined as TBA ≥40 μmol/L.

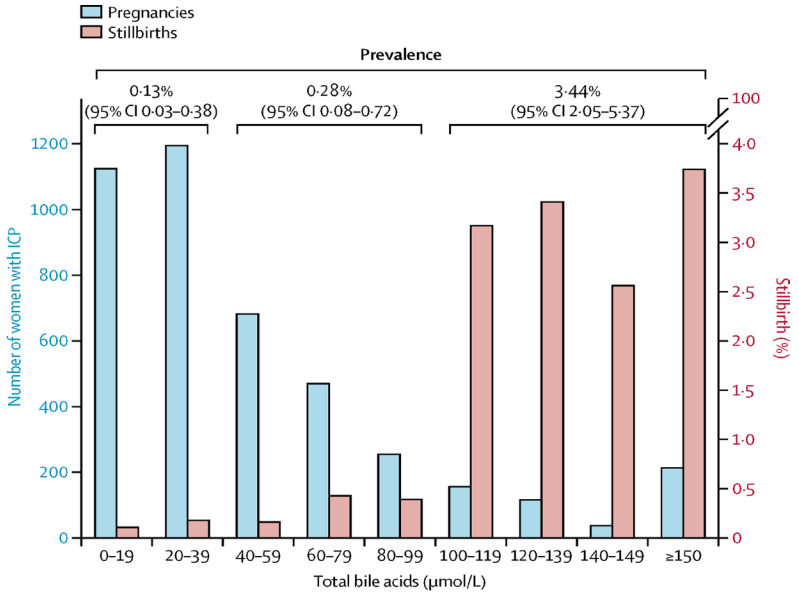
Association of adverse perinatal outcomes of intrahepatic cholestasis of pregnancy with biochemical markers: results of aggregate and individual patient data meta-analyses

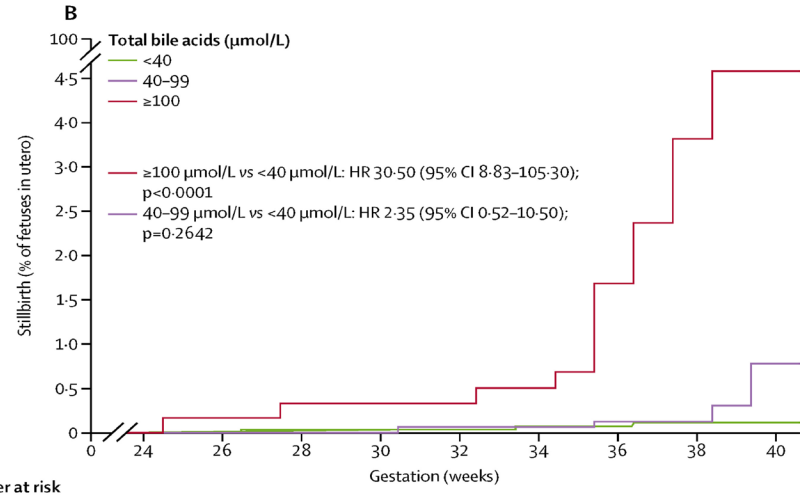
Caroline Ovadia, Paul T Seed, Alexandros Sklavounos, Victoria Geenes, Chiara Di Ilio, Jenny Chambers, Katherine Kohari, Yannick Bacq, Nuray Bozkurt, Romana Brun-Furrer, Laura Bull, Maria C Estiú, Monika Grymowicz, Berrin Gunaydin, William M Hague, Christian Haslinger, Yayi Hu, Tetsuya Kawakita, Ayse G Kebapcilar, Levent Kebapcilar, Jūratė Kondrackienė, Maria P H Koster, Aneta Kowalska-Kańka, Limas Kupčinskas, Richard H Lee, Anna Locatelli, Rocio I R Macias, Hanns-Ulrich Marschall, Martijn A Oudijk, Yael Raz, Eli Rimon, Dan Shan, Yong Shao, Rachel Tribe, Valeria Tripodi, Cigdem Yayla Abide, Ilter Yenidede, Jim G Thornton, Lucy C Chappell, Catherine Williamson**

Summary

Background Intrahepatic cholestasis of pregnancy is associated with adverse perinatal outcomes, but the association with the concentration of specific biochemical markers is unclear. We aimed to quantify the adverse perinatal effects of intrahepatic cholestasis of pregnancy in women with increased serum bile acid concentrations and determine whether elevated bile acid concentrations were associated with the risk of stillbirth and preterm birth.

Lancet 2019; 393: 899–909
Published Online February 14, 2019
http://dx.doi.org/10.1016/S0140-6736(18)31877-4





Number at risk

TBA <40	..	2310	2310	2308	2305	2291	2261	2079	1001	174
TBA 40–99	..	1412	1412	1411	1410	1398	1368	1226	497	62
TBA ≥100	..	524	523	521	515	507	480	378	110	13

The Lancet 2019 393899-909DOI: (10.1016/S0140-6736(18)31877-4)

Ursodeoxycholic acid versus placebo in women with intrahepatic cholestasis of pregnancy (PITCHES): a randomised controlled trial

Lucy C Chappell, Jennifer L Bell, Anne Smith, Louise Linsell, Edmund Juszczak, Peter H Dixon, Jenny Chambers, Rachael Hunter, Jon Dorling, Catherine Williamson, Jim G Thornton*, for the PITCHES study group†*

***Lancet* 2019; 394: 849–60**

Published **Online**
August 1, 2019
http://dx.doi.org/10.1016/S0140-6736(19)31270-X

Interpretation Treatment with ursodeoxycholic acid does not reduce adverse perinatal outcomes in women with intrahepatic cholestasis of pregnancy. Therefore, its routine use for this condition should be reconsidered.

Ursodeoxycholic acid in intrahepatic cholestasis of pregnancy: a systematic review and individual participant data meta-analysis

Caroline Ovadia, Jenna Sajous*, Paul T Seed, Kajol Patel, Nicholas J Williamson, George Attilakos, Francesco Azzaroli, Yannick Bacq, Linoy Batsry, Kelsey Broom, Romana Brun-Furrer, Laura Bull, Jenny Chambers, Yue Cui, Min Ding, Peter H Dixon, Maria C Estiú, Fergus W Gardiner, Victoria Geenes, Monika Grymowicz, Berrin Günaydin, William M Hague, Christian Haslinger, Yayi Hu, Ugo Indraccolo, Alexander Juusela, Stefan C Kane, Ayse Kebapcilar, Levent Kebapcilar, Katherine Kohari, Jūratė Kondrackienė, Maria P H Koster, Richard H Lee, Xiaohua Liu, Anna Locatelli, Rocio I R Macias, Riza Madazli, Agata Majewska, Kasia Maksym, Jessica A Marathe, Adam Morton, Martijn A Oudijk, Deniz Öztekin, Michael J Peek, Andrew H Shennan, Rachel M Tribe, Valeria Tripodi, Naciye Türk Özterlemez, Tharni Vasavan, L F Audris Wong, Yoav Yinon, Qianwen Zhang, Keren Zloto, Hanns-Ulrich Marschall, Jim Thornton, Lucy C Chappell, Catherine Williamson*

Summary

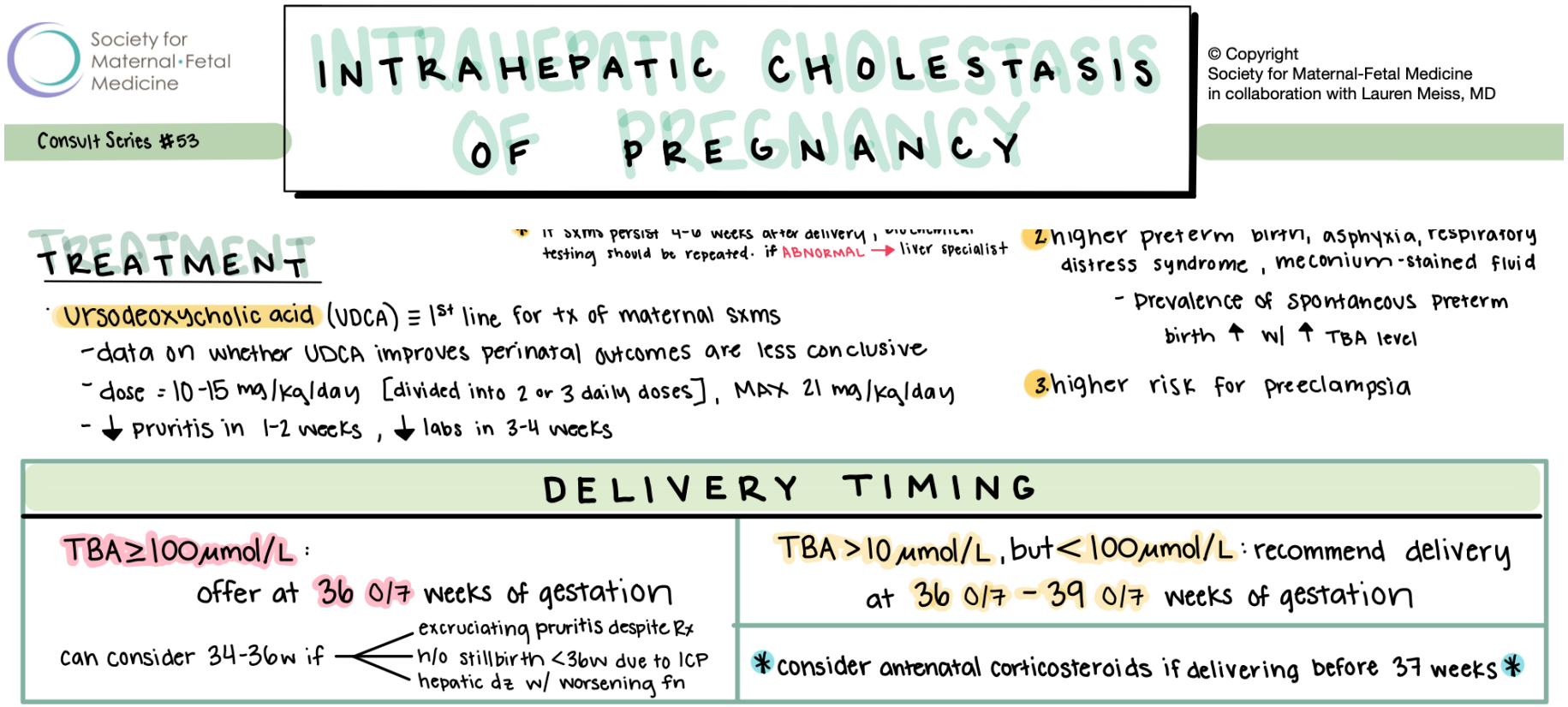
Background Ursodeoxycholic acid is commonly used to treat intrahepatic cholestasis of pregnancy, yet its largest trial detected minimal benefit for a composite outcome (stillbirth, preterm birth, and neonatal unit admission). We aimed to examine whether ursodeoxycholic acid affects specific adverse perinatal outcomes.

Lancet Gastroenterol Hepatol 2021; 6: 547–58

Published Online April 26, 2021

Interpretation Ursodeoxycholic acid treatment had no significant effect on the prevalence of stillbirth in women with intrahepatic cholestasis of pregnancy, but our analysis was probably limited by the low overall event rate. However, when considering only randomised controlled trials, ursodeoxycholic acid was associated with a reduction in stillbirth in combination with preterm birth, providing evidence for the clinical benefit of antenatal ursodeoxycholic acid treatment.

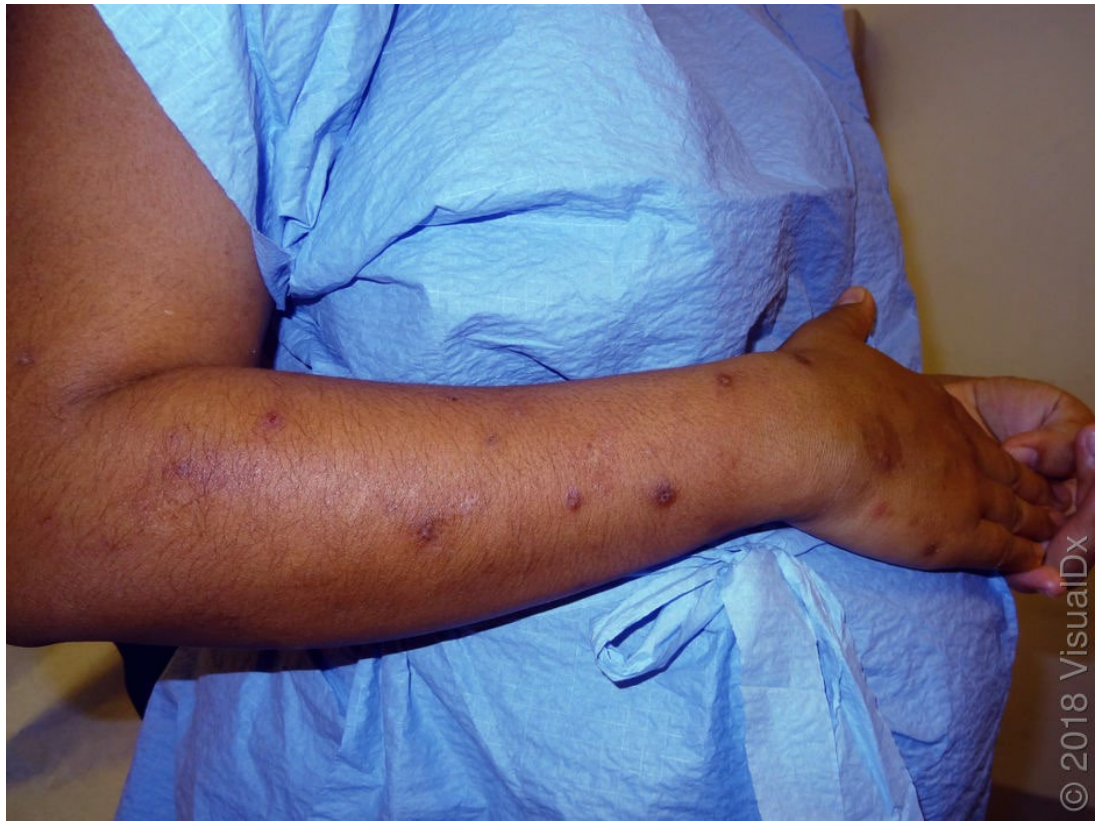
Intrahepatic Cholestasis of Pregnancy



https://publications.smfm.org/publications/374-society-for-maternal-fetal-medicine-consult-series-53/

Intrahepatic Cholestasis of Pregnancy

- Recurrence
  - Yes; 45 -75 % of cases
  - Also during oral contraceptive use

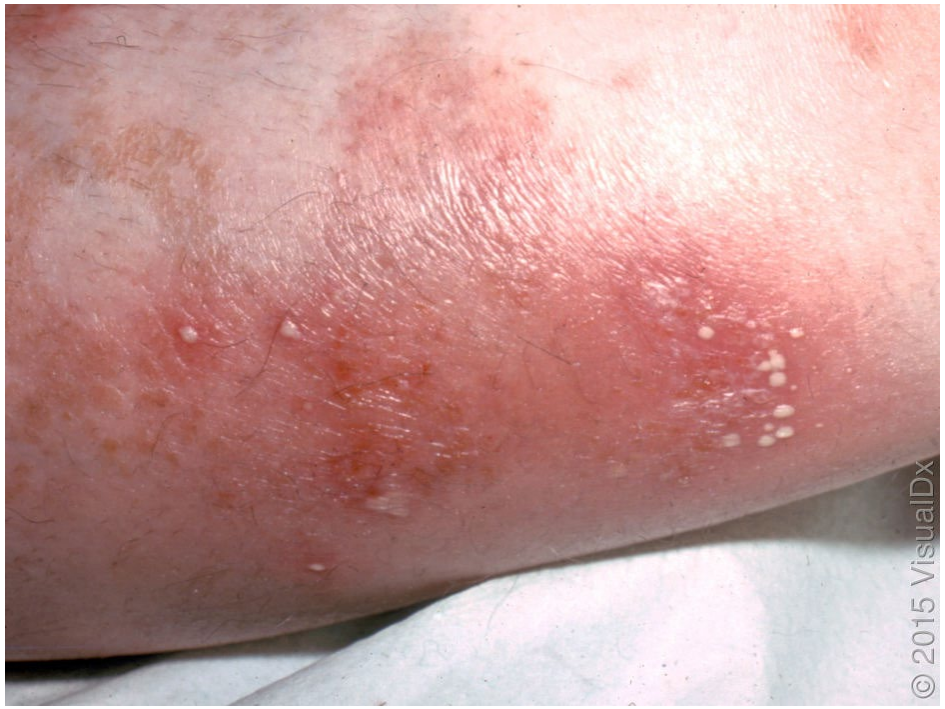


Pustular Psoriasis in Pregnancy

- Synonyms
  - Impetigo herpetiformis (a term that erroneously implies a bacterial or viral etiology).
- ? True pregnancy related dermatosis
- Rare
- Any trimester, usually 3rd
- Pathophysiology poorly understood
  - ? Elevated levels of progesterone

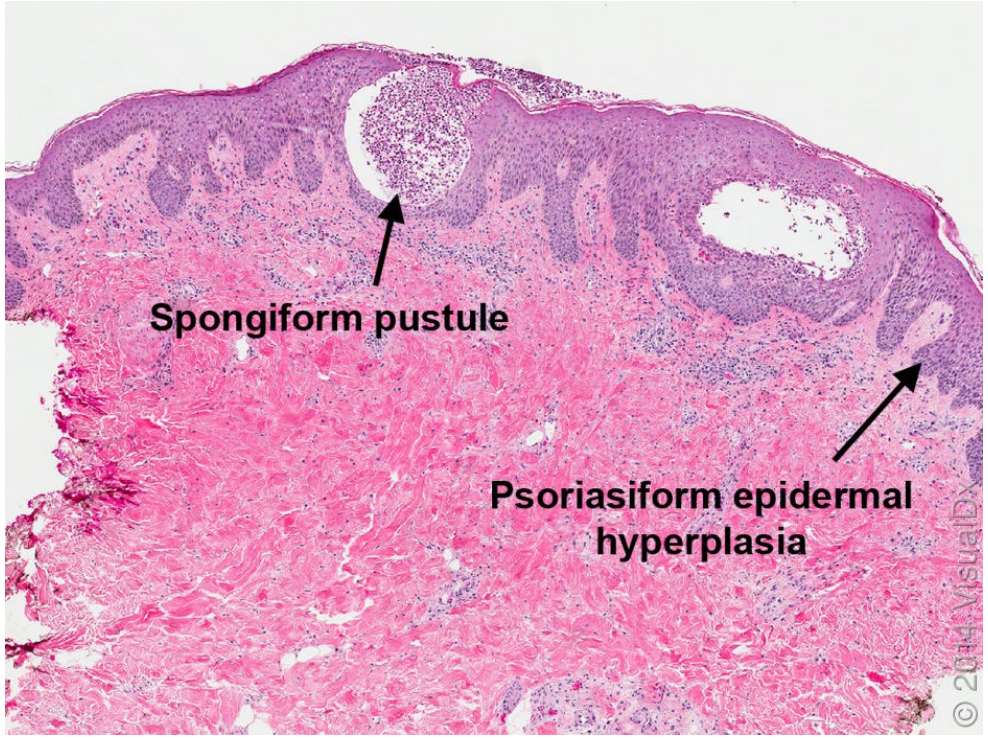
Pustular Psoriasis in Pregnancy

- Erythematous plaques surrounded by hundreds of pustules
  - Typically arranged in concentric ring
- Pustules gradually enlarge and form a crust at their centers.
- Classically develops in intertriginous areas
  - May also present on the abdomen and may spread to the trunk
- Malaise, anorexia, fever, muscle weakness, or chills



Pustular Psoriasis of Pregnancy

- Diagnosis
  - Clinical
  - Leukocytosis, hypocalemia, hypoalbuminemia, hypoparathyroidism, low vitamin D, increased ESR
  - Biopsy to confirm diagnosis
- Treatment
  - Systemic steroids
  - TNF alpha inhibitors
  - Cyclosporine



Pustular Psoriasis of Pregnancy

JOURNAL OF DERMATOLOGICAL TREATMENT
2024, VOL. 35, NO. 1, 2334791
https://doi.org/10.1080/09546634.2024.2334791

CASE REPORT

Successful treatment of recalcitrant generalized pustular psoriasis of pregnancy with spesolimab

Chenxin Yang[a,b,c], Yang Wang[a,b,c], Ruoyu Li[a,b,c], Ping Tu[a,b,c] and Ruojun Wang[a,b,c]

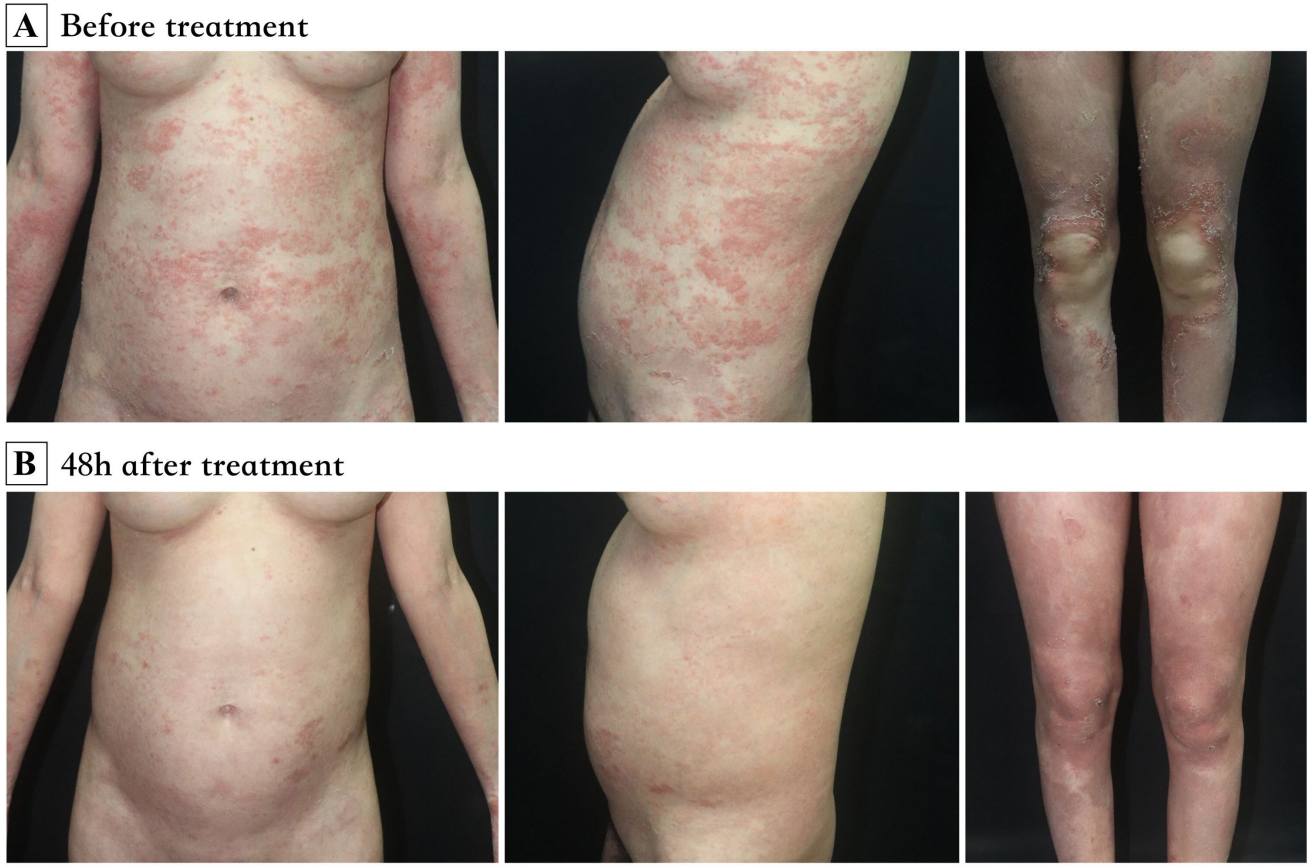
[a]Department of Dermatology, Peking University First Hospital, Beijing, China; [b]National Clinical Research Center for Skin and Immune Diseases, Beijing, China; [c]Beijing Key Laboratory of Molecular Diagnosis on Dermatoses, Beijing, China

ABSTRACT

Generalized pustular psoriasis (GPP) in pregnancy can lead to severe complications for both mother and fetus. The treatment of this disease is challenging, especially in recalcitrant and severe cases. Until present, there are no evidence-based guidelines for the treatment of GPP in pregnancy. Spesolimab, a human monoclonal antibody against the IL-36 receptor, has recently attracted attention as a new therapy for GPP flare. This biologic provides rapid and sustained control of symptoms of GPP flare, although its use in pregnant women has not been reported to date. Here, we report a pregnant woman with refractory GPP who did not respond well to systemic steroids. Administration of spesolimab resulted in complete control of the disease and the birth of a healthy baby. Our case demonstrates that IL-36RN inhibitors are a potentially effective and safe treatment option for GPP in pregnancy.

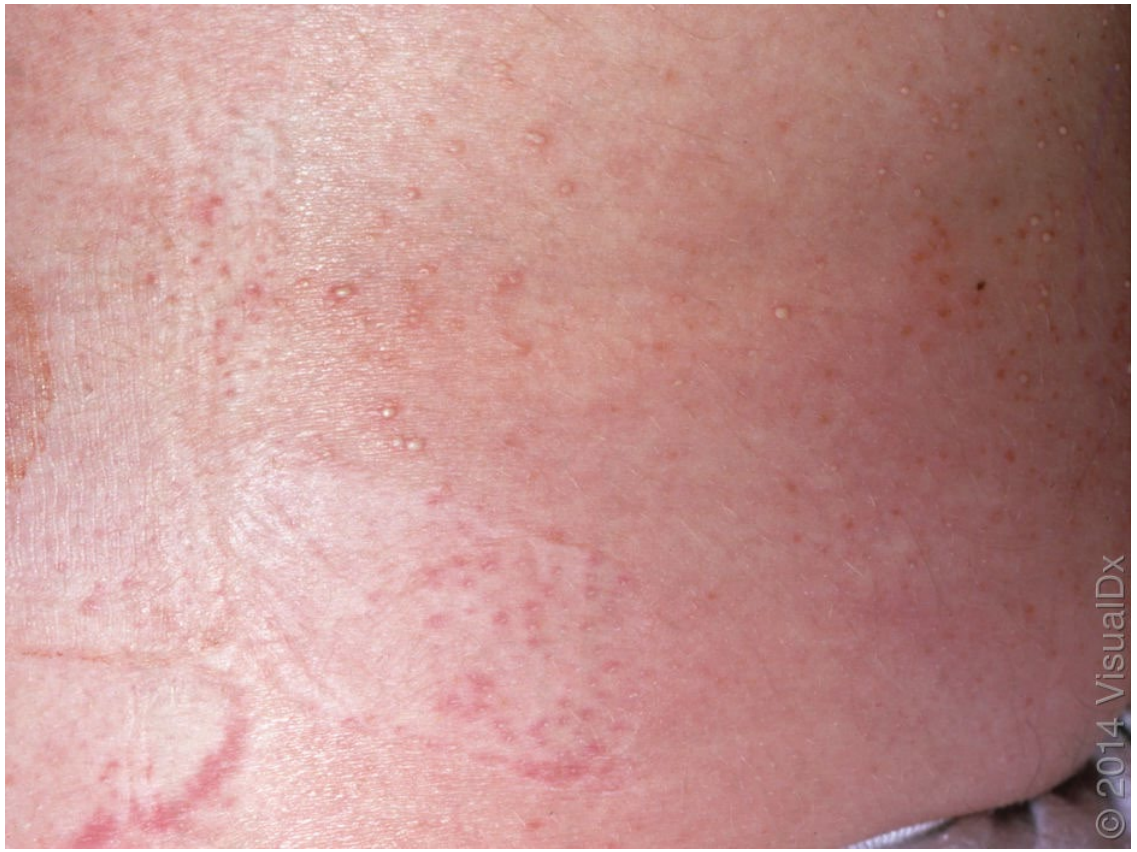
ARTICLE HISTORY
Received 15 February 2024
Accepted 20 March 2024

KEYWORDS
Generalized pustular psoriasis; pregnancy; biologics; spesolimab



Pustular Psoriasis of Pregnancy

- Maternal Risk
  - Electrolyte imbalances
  - Dehydration
  - Sepsis from secondary infections
  - Hypocalcemia with tetany, delirium seizures
  - HTN
- Fetal Risk
  - Premature birth, intrauterine growth restrictions, PROM
  - Stillbirth, neonatal demise

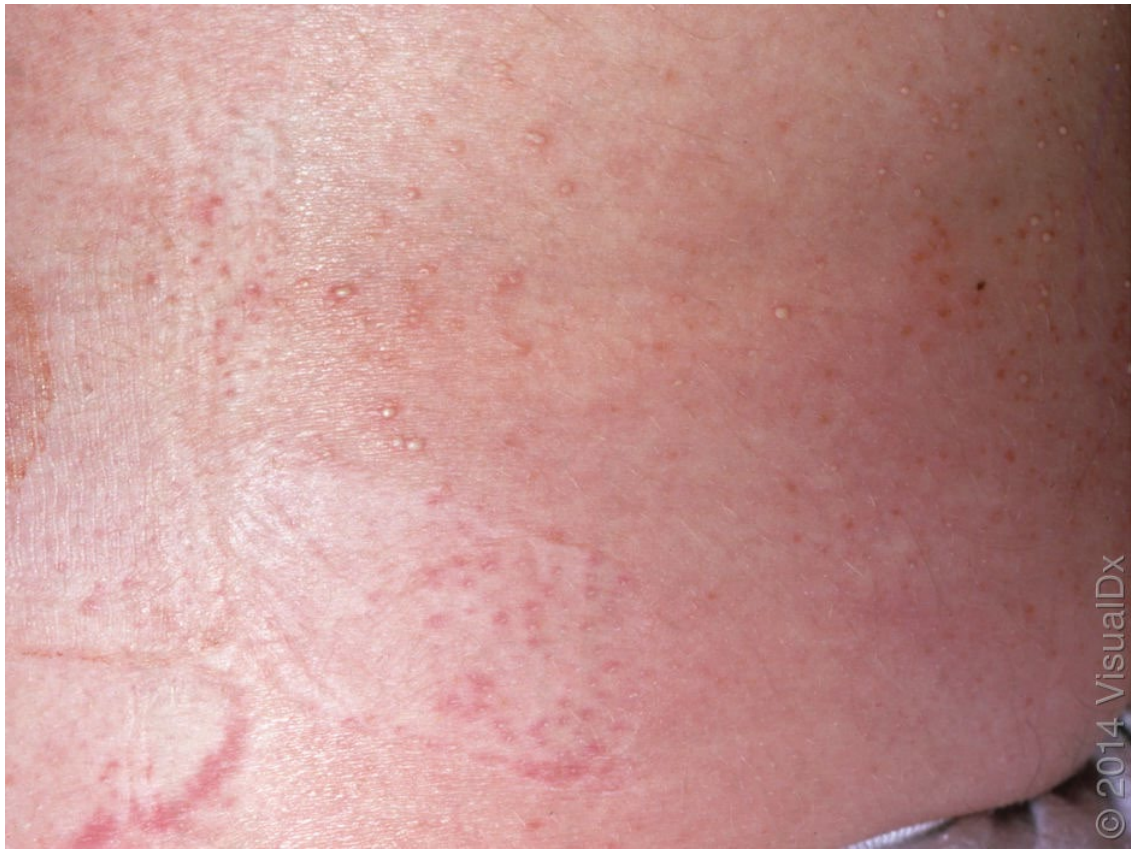


Pustular Psoriasis of Pregnancy

- Patients should be managed by a dermatologist and an obstetrician for fetal monitoring
- Antepartum fetal monitoring should be performed regularly, including biophysical profile and uterine artery Doppler ultrasound to monitor for placental insufficiency.
- In all cases, careful laboratory monitoring and fluid and electrolyte resuscitation should be initiated early given the risk of maternal infections, large fluid losses, and electrolyte imbalances

Pustular Psoriasis of Pregnancy

- Recurrence
  - May recur with subsequent pregnancies with increased severity, menses, OCP



Learning Objectives

- Describe and recognize the specific dermatoses of pregnancy
- Describe the maternal and fetal risks for specific dermatoses of pregnancy
- Describe the risks for recurrence for specific dermatoses of pregnancy

Summary

- Physiologic skin changes in pregnancy
  - Pigmentation, connective tissue, vascularity, glands, hair and mucous membranes
- Common dermatoses in pregnancy
  - Atopic dermatitis, psoriasis, pityriasis rosea, acne and hidradenitis suppurativa
- Specific dermatoses of pregnancy + maternal and fetal risks
  - AEP, PEP, PG and ICP (+/- PPP)

Thank You

Practice Safe Sun:
Protect Yourself From the Sun

Sun exposure is the most preventable risk factor for all skin cancers, including melanoma. You can have fun in the sun and decrease your risk of skin cancer.

Here's how to protect yourself from the sun:

Seek shade. The sun's rays are strongest between 10 a.m. and 2 p.m. If your shadow is shorter than you are, seek shade.

Wear sun-protective clothing, such as a lightweight, long-sleeved shirt, pants, a wide-brimmed hat, and sunglasses with UV protection, when possible. For more effective protection, choose clothing with an ultraviolet protection factor (UPF) number on the label.

Apply a broad-spectrum, water-resistant sunscreen with an SPF of 30 or higher to all skin not covered by clothing. Broad-spectrum sunscreen provides protection from both ultraviolet A (UVA) and ultraviolet B (UVB) rays. Reapply every two hours, even on cloudy days, and after swimming or sweating.

Use extra caution near water, snow, and sand, as they reflect and intensify the damaging rays of the sun, which can increase your chance of skin cancer.

Avoid tanning beds. If you want to look tan, consider using a self-tanning product, but continue to use sun protection outdoors.

If you find any new or suspicious spots on your skin, or any spots that are changing, itching, or bleeding, make an appointment to see a board-certified dermatologist.

To learn more about skin cancer detection and prevention, talk to a board-certified dermatologist or visit **SpotSkinCancer.org**.

AAD spot skin cancer

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