The skin in Pregnancy

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Rash in Pregnancy

- Pre-existing Dermatoses
- Physiological Skin Changes
- Specific Dermatoses of Pregnancy
Physiological changes

• Hormonal changes

Skin/Hair/Nail changes
Rash in Pregnancy

- Pre-existing Dermatoses
- Specific Dermatoses of Pregnancy
- Physiological Skin Changes
Pregnancy Specific Dermatoses

- Heterogenous group characterized by **pruritus** and **inflammatory** changes
- Occurrence during pregnancy and immediately postpartum
- Distinct pathogenesis
- Diagnosis based on clinical, lab and histological features
Specific dermatoses of pregnancy:

<table>
<thead>
<tr>
<th>Proposed classification</th>
<th>Synonym(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Pemphigoid gestationis</td>
<td>Herpes gestationis</td>
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<tr>
<td>2. Polymorphic eruption of pregnancy</td>
<td>Pruritic urticarial papules and plaques of pregnancy</td>
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<td></td>
<td>Toxic erythema of pregnancy</td>
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<td></td>
<td>Toxic rash of pregnancy</td>
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<td></td>
<td>Late-onset prurigo of pregnancy</td>
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<tr>
<td>3. Atopic eruption of pregnancy</td>
<td>Prurigo of pregnancy</td>
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<tr>
<td></td>
<td>Prurigo gestationis</td>
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<tr>
<td></td>
<td>Early-onset prurigo of pregnancy</td>
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<td></td>
<td>Papular dermatitis of pregnancy</td>
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<td></td>
<td>Pruritic folliculitis of pregnancy</td>
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<td></td>
<td>Eczema in pregnancy</td>
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<tr>
<td>4. Intrahepatic cholestasis of pregnancy</td>
<td>Cholestasis of pregnancy</td>
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<tr>
<td></td>
<td>Pruritus/prurigo gravidarum</td>
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<td></td>
<td>Obstetric cholestasis</td>
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<td></td>
<td>Jaundice of pregnancy</td>
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</tbody>
</table>

Adapted from: Ambros-Rudolph et al.⁴
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

Pregnancy Specific Dermatoses

- Atopic Eruption of Pregnancy (AEP) (50%)
  - Early in pregnancy
- Polymorphic Eruption of Pregnancy (PEP)
  - Rash
  - Late in pregnancy
- Pemphigoid Gestationis (PG)
  - Rash
- Intrahepatic Cholestasis of Pregnancy (ICP)
  - No rash
Pruritus in Pregnancy
3 Questions

1) Rash or not?

If a rash is visible:

2) Is the rash related to pregnancy?

3) Early or late in pregnancy?
No Rash

Only secondary skin changes due to scratching
Lab

- Elevated total serum **bile acid levels**
- Impaired **liver function test**
Intrahepatic cholestasis of pregnancy (ICP)

- Usually affected in previous pregnancies
- Genetically linked
- Hormonally induced
- Reversible
- Oral contraceptives
- Initially on palms and soles
IMPORTANT! = FETAL RISK!

- Premature births (20%-60%)
- Fetal distress (20%-30%)
- Stillbirths (1%-2%)
- Risk correlates with bile acid levels
Treatment

• Early diagnosis
• Prompt treatment
• Ursodeoxycholic acid = drug of choice
• Decrease pruritus and fetal complications
Rash
Rash

Related to pregnancy?

YES

Pregnancy Specific Dermatoses

NO

Coinciding conditions
2. Related to pregnancy?

- Coinciding disease
Table II. Miscellaneous skin diseases coinciding with pregnancy observed in this study (n = 104)

<table>
<thead>
<tr>
<th>Category</th>
<th>No. of patients (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Inflammatory diseases</strong></td>
<td></td>
</tr>
<tr>
<td>Pityriasis rosea</td>
<td>14</td>
</tr>
<tr>
<td>Acne (involving face and trunk)</td>
<td>13</td>
</tr>
<tr>
<td>Urticaria (other than drug induced)</td>
<td>8</td>
</tr>
<tr>
<td>Psoriasis</td>
<td>6</td>
</tr>
<tr>
<td>Lichen planus</td>
<td>5</td>
</tr>
<tr>
<td>Lupus erythematodes</td>
<td>3</td>
</tr>
<tr>
<td>Hemorrhagic pigmented dermatosis</td>
<td>2</td>
</tr>
<tr>
<td>Leukocytoclastic vasculitis</td>
<td>1</td>
</tr>
<tr>
<td>Linear IgA dermatosis</td>
<td>1</td>
</tr>
<tr>
<td>Pemphigus vulgaris</td>
<td>1</td>
</tr>
<tr>
<td><strong>Cutaneous infections/infestations</strong></td>
<td>27 (26%)</td>
</tr>
<tr>
<td>Viral</td>
<td>8</td>
</tr>
<tr>
<td>Mycotic</td>
<td>7</td>
</tr>
<tr>
<td>Scabies</td>
<td>6</td>
</tr>
<tr>
<td>Multiple arthropod bites</td>
<td>4</td>
</tr>
<tr>
<td>Bacterial</td>
<td>2</td>
</tr>
<tr>
<td><strong>Drug reactions</strong></td>
<td>12 (11.5%)</td>
</tr>
<tr>
<td>Morphology: exanthema/urticaria</td>
<td>6/6</td>
</tr>
<tr>
<td>Caused by: antibiotics/NSAIDs/other drugs</td>
<td>4/3/5</td>
</tr>
<tr>
<td>Contact dermatitis</td>
<td>11 (10.5%)</td>
</tr>
<tr>
<td>(with secondary spreading)</td>
<td></td>
</tr>
</tbody>
</table>

NSAIDs, non-steroidal anti-inflammatory drugs.
3. Time of onset?

Early

Before 3rd trimester
Trunk and limbs

AEP

Late

After the 3rd trimester
Predominantly abdominal involvement

PG

PEP
Early onset

Trunk and limb involved

AEP

E-type or P-type
Atopic eruption of pregnancy (AEP)

- Prurigo of pregnancy
- Prurigo gestationis
- Early-onset prurigo of pregnancy
- Papular dermatitis of pregnancy
- Pruritic folliculitis of pregnancy
- Eczema of pregnancy
Atopic Eruption of Pregnancy

- Exacerbation of Pe-existing Atopic Dermatitis
- 1st Onset (or after a long remission)

- 80%
- 20%
Eczematous
Papular
Atopic eruption of pregnancy (AEP)

E-Type, 66%
P-Type, 33%
Late onset

- Papulo-urticarial eruption
  - Onset within striae
  - Periumbilical sparing

- Vesico-bullous eruption on utricarial erythema
  - Periumbilical involvement
Polymorphic Eruption of Pregnancy (PEP)

- Erythematous Plaques within Stria Distensae
- Spread to buttocks and thighs with 2nd generalization
- Common in primigravidae with multiple pregnancies
- Onset at times of greatest abdominal distention
Treatment

• Topical steroids
• Antihistamines
Fetal prognosis

- No fetal risk
Pemphigoid gestationis

- Bullous pemphigoid in pregnancy
- Auto-immune bullous disorder
- C3 deposits in basal membrane
- Cross reaction with placental antigens
Special investigations

- Skin biopsy and Direct immunofluorescence
Fetal Prognosis

- Increase in immaturity & small for weight babies
- Risk correlates with disease severity
- 10% develop mild skin lesions with quick resolution
Treatment

• Topical corticosteroids play a very limited role
• Systemic corticosteroids: 0.5-1mg/kg/day
Which questions do we need to ask?
Special investigations?

- Skin biopsy
- Direct immunofluorescence
Table 3. Significant differences in the clinical characteristics among the various pregnancy dermatoses in a retrospective two-center study (n = 401)\(^3\)

<table>
<thead>
<tr>
<th></th>
<th>PG (n = 21)</th>
<th>PEP (n = 109)</th>
<th>ICP (n = 15)</th>
<th>AEP (n = 256)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Primiparous women, %</td>
<td>48</td>
<td>73(^a)</td>
<td>47</td>
<td>44</td>
</tr>
<tr>
<td>Multiple pregnancies, %</td>
<td>0</td>
<td>16(^a)</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Identical skin lesions in previous pregnancies, %(^x)</td>
<td>9</td>
<td>7</td>
<td>88(^b)</td>
<td>34</td>
</tr>
<tr>
<td>Early presentation (&lt; third trimester), %</td>
<td>29</td>
<td>3</td>
<td>20</td>
<td>75(^c)</td>
</tr>
<tr>
<td>Average begin ± SD (span), week of gestation</td>
<td>28 ± 7 (14 ~ 38)</td>
<td>34 ± 5 (17 ~ 41)</td>
<td>30 ± 5 (24 ~ 36)</td>
<td>18 ± 9 (2 ~ 39)(^c)</td>
</tr>
<tr>
<td>Location: abdominal involvement, %</td>
<td>95(^d)</td>
<td>98(^d)</td>
<td>36</td>
<td>68</td>
</tr>
<tr>
<td>Main symptom: pruritus alone, %</td>
<td>0</td>
<td>0</td>
<td>100</td>
<td>0</td>
</tr>
<tr>
<td>Morphology: secondary skin lesions exclusively, %</td>
<td>0</td>
<td>0</td>
<td>100</td>
<td>0</td>
</tr>
</tbody>
</table>

Pregnancy Specific Dermatoses

- Atopic Eruption of Pregnancy (AEP) (50%)
- Polymorphic Eruption of Pregnancy (PEP)
- Pemphigoid Gestationis (PG)
- Intrahepatic Cholestasis of Pregnancy (ICP)

Summary

Early in pregnancy:
- Rash

Late in pregnancy:
- No rash

Biopsy Immuno
Summary

• Serious disorders: ICP & PG
• Always to consider coinciding dermatoses
References

- Dermatoses of pregnancy - clues to diagnosis, fetal risk and therapy.

- Pregnancy dermatoses: diagnosis, management, and controversies.

- Recent developments in the specific dermatoses of pregnancy.

- The Diagnosis and management of eczema in pregnancy
  - *Current Allergy & Clinical Immunology* 2009;22(1):18-22