

Managing the skin in pregnancy

Part 1. Pregnancy-related skin concerns

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Pregnancy-associated skin concerns range from common benign conditions such as stretch marks and skin pigmentation to rarer specific dermatoses of pregnancy, some of which are associated with maternal and fetal risk. Management requires knowledge of which treatments are safe and practical while a woman is pregnant or breastfeeding.

KEY POINTS

- Benign pregnancy-related skin concerns are common and are mostly treatable either during the pregnancy or, if they persist, after the birth.
- Specific dermatoses of pregnancy such as intrahepatic cholestasis of pregnancy and pemphigoid gestationis are associated with maternal and fetal risk.
- Topical medications are usually the first-line choice for treatment of most skin conditions during pregnancy (estimated percutaneous absorption 4 to 25%).
- Selected systemic medications may be used after consideration of their safety and the high-risk periods during pregnancy.
- Referral to a dermatologist is recommended when the diagnosis is unclear or the condition does not respond to treatment or is associated with potential fetal or maternal risk.



Pregnant women with skin concerns usually present first to their GPs, who play a major role in their diagnosis, management and timely referral when required. Skin concerns in pregnant women can be broadly divided into benign conditions related to the pregnancy, potentially more serious pregnancy-specific skin rashes and pre-existing or incident skin diseases that require management during pregnancy. Postpartum, women may also present to their GP with skin concerns. Management of these conditions requires knowledge of which treatments are safe and practical while a woman is pregnant or breastfeeding.

This is the first article in a short series that discusses the management of skin conditions during pregnancy and breastfeeding. This article focuses on the management of pregnancy-related skin concerns, including benign conditions such as stretch marks and pigmentation and more severe pregnancy-specific skin rashes, some of which pose fetal and maternal risk. It also summarises the safety during pregnancy and breastfeeding of topical and systemic medications used to treat skin conditions. Future articles in the series will discuss the management of pre-existing skin diseases, such as acne, psoriasis and atopic dermatitis, and skin cancer during pregnancy, as well as common postpartum skin problems.

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Figures 1a and b. Stretch marks. a (left). Early stretch marks (red stage). These respond well to vascular laser therapy. b (right). Old stretch marks leave white or silvery lines. These respond well to fractionated laser therapy.

Benign pregnancy-related skin concerns

Stretch marks

Stretch marks occur when the skin is subjected to continuous and progressive stretching. They are more frequent in women with large babies in comparison with their size, multiple pregnancies or obesity. Common locations for stretch marks in pregnant women include the abdomen, breasts and thighs. At their onset the skin initially becomes pink, occasionally itchy and then purple. Over time the stretch marks become white or silvery (Figures 1a and b).

Unfortunately, there are no truly effective ways of preventing stretch marks in those who are vulnerable to them. There is no evidence that topical agents or moisturising oils prevent them, but oils may relieve the itch that can sometimes be present. Daily massage with olive oil possibly helps. Control of excessive weight gain may assist in preventing their development.



Figure 2. Linea nigra.

After pregnancy, the best time to treat stretch marks is when they are still red. Once the lesions are white or silver, fractional laser therapy can be effective. Referral to a dermatologist with experience in laser management can be helpful for management of both early and old stretch marks. There is evidence that topical retinoids may also help.¹ However, in practice I have found them only partially effective.

Skin pigmentation

Darkening of the skin around the nipples, genitalia and in a line from the umbilicus to the pubis (linea nigra) is common and normal in pregnancy, especially in women with dark skin (Figure 2). Scars may also darken.

Melasma (also known as chloasma) is a distressing form of facial pigmentation that affects many pregnant women (Figure 3). Conventional lightening products such as hydroquinone and tretinoin are contraindicated in pregnancy, although they are likely to be safe during breastfeeding



Figure 3. Melasma.

when used on a small surface area.² Sun protection is important as all hyperpigmenting conditions are exacerbated by sun exposure.

GPs are involved in the early treatment of melasma. Daily sun avoidance and sun protection should be recommended, as well as avoidance of rubbing, abrasive treatments or scrubs, friction, perfumed products or any product that stings, as irritation can encourage pigmentation. The importance of avoiding waxing affected areas should be explained as waxing promotes inflammation and worsens melasma. Topical azelaic acid is safe to use during pregnancy and has a gradual lightening effect.² Superficial peels containing low concentrations of salicylic acid or glycolic acid are likely to be safe during pregnancy.² Referral to an experienced dermatologist may be beneficial if this resource is not available.

Women should be reassured that melasma is not permanent and in most cases fades gradually over six to 12 months after the birth. To hasten postpartum resolution, an additional bleaching agent can be commenced. Many formulas are reported to be effective. In my clinical practice, I have found a compounded formula containing hydroquinone 2 to 4%, tretinoin 0.5%, hydrocortisone 1% in aqueous delivers the best results. Hydroquinone and tretinoin are considered moderately safe in lactation on a small surface area.² I advise using a pea-sized amount with a moisturiser initially every alternate night, gradually working up to daily application to help avoid irritation. Avoid using hydroquinone in high concentrations for long periods as this may result in permanent bluish discoloration of the skin.

Laser therapy has been reported to be helpful for melasma, but in practice I find this delivers disappointing results and sometimes worsens the condition. In addition, there is little point advising patients to make a large investment in treatment if they plan to have more children, as melasma will probably recur in subsequent pregnancies.

Skin tags

Skin tags (fibroma pendulum) are small skin growths that appear in areas of friction, such as under the arms and breasts. Most resolve spontaneously after the pregnancy. If they persist and bother the patient, I offer a variety of treatments, such as liquid nitrogen spray, snip excision, electrodesiccation or shave excision. The choice of treatment depends on the size of the skin tag and the thickness of its base. If the tag and its base are tiny then snip excision using spring scissors with or without local anaesthesia is helpful and easy. (Snip excision of a tiny skin tag typically causes less pain than local anaesthesia.) If the base is larger, I tend to infiltrate a local anaesthetic and then use forceps to assist shave excision. Cryotherapy is quick but can leave residual surrounding post-inflammatory pigmentation or erythema, and multiple treatments are sometimes required.

Hair and pregnancy

Hair thinning

Scalp hair continuously goes through growth, resting and shedding cycles. Throughout pregnancy more hair follicles stay in the growth and resting phase, so that hair shedding is reduced and the hair feels thicker. Postpartum, the hair cycle returns to normal, and approximately three months after the birth hair shedding is temporarily increased. This phenomenon is termed 'telogen effluvium gravidarum'.

This hair loss can cause great distress to women and GPs are usually the first to deal with the emotional and physical effects. The increased shedding is usually complete by six to 12 months after delivery, and hair returns to its pre-pregnancy state.³ However, some women feel that their hair is not as thick as before the pregnancy and may also report a change in hair texture, curliness or even colour. It is important to acknowledge the distress that hair loss can cause women, especially as it is established that around 25% of scalp hair must be lost before identifiable thinning occurs.²

If hair loss is severe then a systemic



Figures 4a and b. A pyogenic granuloma in a pregnant patient (a, left) before curettage and (b, right) two weeks after curettage.

screen investigating for anaemia, iron deficiency and thyroid abnormality is beneficial. Reassurance that the hair should be back to normal by the baby's first birthday is important. Simple measures, such as using a thickening shampoo, avoiding aggressive treatments to the hair and avoiding tight hair styling may be helpful. In addition, microfibre treatments are safe, relatively inexpensive and effective in giving the appearance of thicker hair. A healthy balanced diet and stress reduction strategies may also prevent ongoing shedding.

If hair loss continues after 12 months postpartum then referral to a dermatologist is warranted for investigation and consideration of systemic therapy.

Hirsutism

Pregnant women may experience excessive hair growth in locations such as the lip, chin, cheeks and suprapubic area. This is more common in women who have pre-existing abundant body hair or very dark hair. Fine hair may disappear after pregnancy, but thicker hairs can remain.³ During pregnancy, waxing or plucking may help the woman feel better and more confident.

Postpartum, I find that the most effective treatment for hirsutism with more permanent results is laser therapy. This is safe during breastfeeding. Laser hair reduction has become much more affordable and readily available. As women vulnerable to hirsutism often have darker skin, the type of laser needs to be carefully chosen, and

referral to a dermatologist experienced in laser therapy may be helpful. Patients should be instructed not to wax or pluck for six weeks before laser therapy as the shaft of the hair bulb is needed as a target for the laser. Patients should shave in the lead up to laser. This can seem foreign to patients, especially on the face. Multiple laser treatments (approximately four depending on the location of the hair) are required at six to eight-week intervals. Darker, thicker hair responds best to laser therapy, whereas white or blonde hair does not respond. If the patient cannot access laser therapy then waxing and electrolysis are options during breastfeeding.

Spider veins

Spider veins are common during pregnancy and are found predominantly on the chest, face and neck and occasionally on the arms and abdomen. They often have a central point surrounded by radiating tiny dilated vessels or telangiectasia. When the spider vein is compressed, it is emptied of blood, and when the pressure is released, it refills. About 75% of spider veins fade by the seventh week postpartum.³ However, they can persist, recur and enlarge in the same site in subsequent pregnancies. If they are cosmetically concerning then postpartum management is warranted. Spider naevi are extremely responsive to therapy with a 595 nm vascular laser. In experienced hands, they may resolve after one treatment, but occasionally a second treatment may be required.

Pyogenic granulomas

Pyogenic granulomas are reactive vascular lesions that present as rapidly growing red lumps at sites of local trauma (Figure 4a). They are annoying and uncomfortable and often bleed. They gradually increase in size until the birth and then undergo involution.

If these granulomas are a problem and treatment is considered necessary then my favoured approach during pregnancy is serial curettage and electrodesiccation after local anaesthesia, with care to remove the proliferating dermal base to prevent recurrence (Figure 4b). Histopathological confirmation of the diagnosis is reassuring to exclude rare differential diagnoses. If the lesion recurs then curettage or excision can be repeated or the lesion can be monitored until the birth. Topical imiquimod 5% (category B1) has also been reported to be effective in management of pyogenic

granuloma.⁴ However, its safety during pregnancy and lactation is not certain.

Leg veins

The growing uterus places pressure on the large veins behind it, which may lead to ankle swelling and in some patients to the formation of varicose and thread veins and a skin rash from gravitational eczema. Treatments to reduce these problems during pregnancy include leg elevation, supportive stockings and exercise.

After pregnancy, many women are concerned by the appearance of their leg veins. However, unless a woman has extreme symptoms, it is sensible to defer treatment of leg veins until she has completed her family as the lesions are likely to worsen or recur in subsequent pregnancies. If leg veins are causing symptoms or cosmetic concerns then referral for imaging of the superficial and deep venous system is useful.

The gold standard for managing superficial veins and small surface thread vessels is sclerotherapy. Some patients can be managed nonsurgically with endovascular laser and radiofrequency occlusion laser therapy. Laser therapy is not as effective as sclerotherapy for leg vein problems but can be used as an alternative and may also help in 'tidying up' tiny superficial thread veins that are too small to inject with a sclerosant. Multiple treatments are required at six to eight-week intervals. Postinflammatory pigmentation can occur.

Specific dermatoses of pregnancy

The specific dermatoses of pregnancy are a group of rare rashes unique to pregnancy. Despite their rarity, it is essential for GPs to be familiar with these dermatoses as some can be associated with maternal and fetal risk.

TABLE 1. RECENT CLASSIFICATION OF SPECIFIC DERMATOSES OF PREGNANCY⁵

New classification	Previous synonym(s)
Atopic eruption of pregnancy	Prurigo of pregnancy
	Prurigo gestationis
	Papular dermatitis of pregnancy
	Pruritic folliculitis of pregnancy
	Eczema in pregnancy
Polymorphic eruption of pregnancy	Pruritic urticarial papules and plaques of pregnancy (PUPPPs)
	Toxic erythema of pregnancy
Pemphigoid gestationis	Herpes gestationis
Intrahepatic cholestasis of pregnancy	Cholestasis of pregnancy
	Pruritus/prurigo gravidarum
	Obstetric cholestasis
	Jaundice of pregnancy

Because of their rarity and the clinical overlap between these dermatoses, there is ongoing discussion about their classification. A recent simplified classification system for the specific dermatoses of pregnancy is shown in Table 1.⁵ They comprise atopic eruption of pregnancy, polymorphic eruption of pregnancy, intrahepatic cholestasis of pregnancy and pemphigoid gestationis. Their characteristics are summarised in Table 2.

At a practical level, it is most likely that pregnant women with a specific dermatosis of pregnancy will present with an itch. A conceptual approach to the causes of itch in pregnancy is shown in the Flowchart. If a woman is suspected to have a specific dermatosis of pregnancy then referral to a dermatologist can be helpful for diagnosis.

Atopic eruption of pregnancy

Atopic eruption of pregnancy (AEP) is the most common specific dermatosis of pregnancy. It usually presents before the third trimester. In 20% of affected patients, the atopic skin changes represent an exacerbation of pre-existing atopy.⁵ In the other

80%, they occur for the first time during pregnancy or after a long period of remission.⁵ Two-thirds of patients with AEP develop red scaly itchy patches in sites typically affected by atopic eczema (termed eczematous or E-type AEP). The other third of patients have tiny red raised spots (1 to 2 mm) or slightly larger raised skin lumps (at times with scratch marks) on the abdomen, back and limbs, termed prurigo or P-type AEP (Figures 5a and b). Patients often have an elevated serum IgE level, a positive allergy test result for allergens and a family history of atopic diseases.⁶

AEP has no effect on the fetus and usually disappears after delivery. Treatment depends on severity, but moisturisers, topical moderately potent corticosteroids with short bursts of a potent corticosteroid, and oral antihistamines (chlorpheniramine, diphenhydramine, loratadine or cetirizine) are usually enough. Secondary infection can develop from scratching and can be managed with antibiotics (see below for safe drugs during pregnancy).

Referral to a dermatologist may be needed if wet dressings or light therapy are considered necessary or the condition

proves difficult to control. In severe cases systemic corticosteroids or antihistamines may be required. UVB phototherapy is used for resistant cases.

Polymorphic eruption of pregnancy

Polymorphic eruption of pregnancy (PEP; formerly known as pruritic urticarial papules and plaques of pregnancy or PUPPPs) is a benign, self-limiting itchy inflammatory disorder affecting women who are primigravidas in the third trimester of pregnancy or immediately in the postpartum period.^{7,8} The cause is not known but it has been suggested that it could be due to a combination of hormones and an immune response to stretched skin.^{7,9} It is not associated with fetal risk.

PEP usually begins as an itchy rash in the stretch marks on the abdomen and tends to spare the umbilicus. It may resemble hives or appear as a red rash that can sometimes be scaly (Figure 6). The appearance changes as the disease progresses and becomes polymorphic; it may appear as circular hive-like lesions, red patches and sometimes as small blisters.

Referral to a dermatologist may be needed to confirm the diagnosis and exclude other pregnancy-specific dermatoses. The histological appearance is not especially characteristic but biopsy may be helpful to exclude pemphigoid gestationis, which may be associated with fetal risk.

Treatment is symptomatic. As the itch can be unbearable, topical moisturisers, corticosteroids (sometimes with wet dressings) and oral antihistamines are needed. Rarely, a short burst of oral corticosteroid is needed.

PEP resolves spontaneously within weeks after the birth, with no scarring. It is rare for it to recur during subsequent pregnancies.

Pemphigoid gestationis

Pemphigoid gestationis is a rare, itchy autoimmune blistering eruption that usually presents in the second or third trimester. However, patients presenting in the first trimester or postpartum have been

reported.^{5,10,11} The cause is not fully understood but it is believed that antibodies produced to the placenta form circulating immune complexes, which in turn react with the basement membrane of the skin

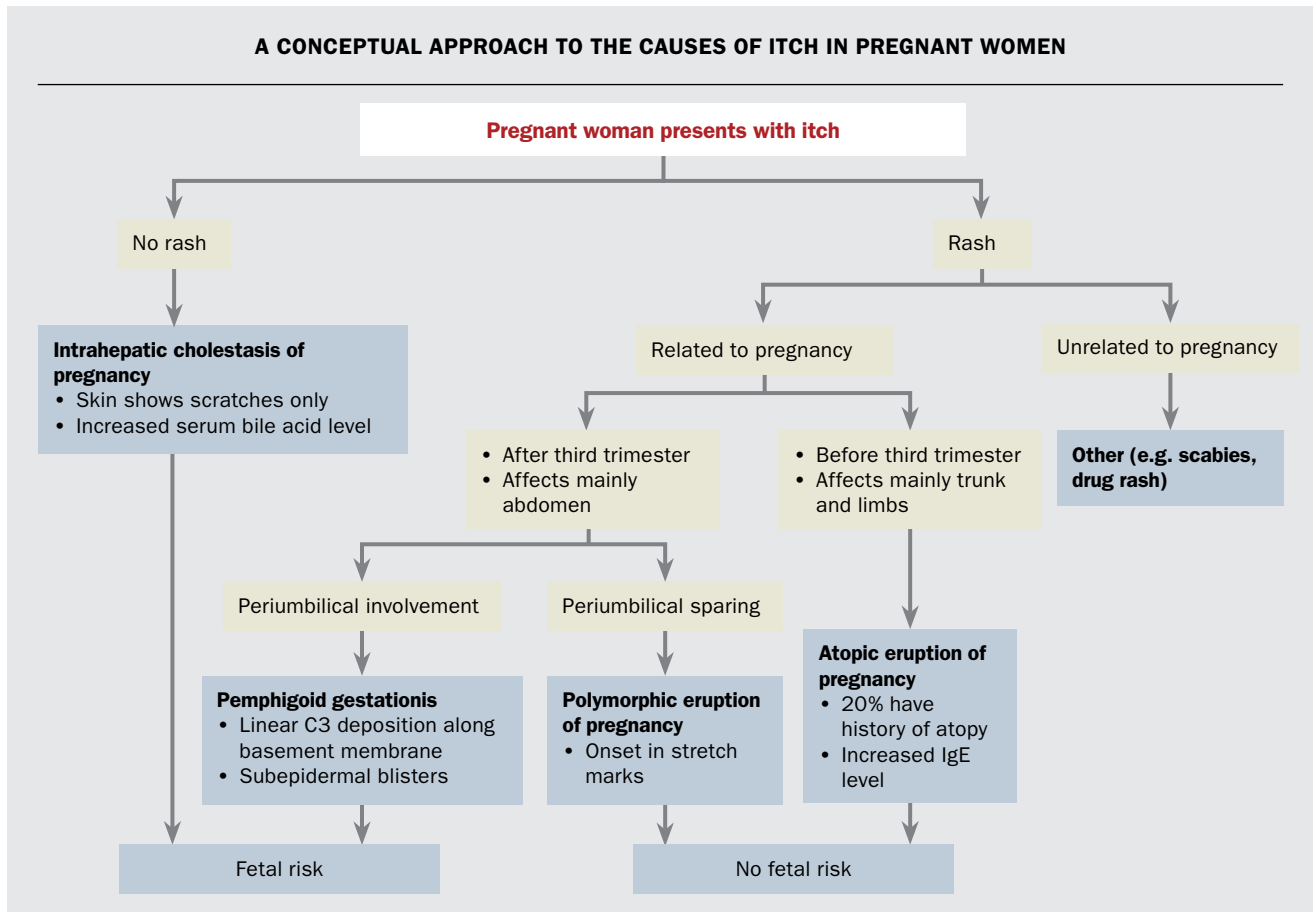
resulting in a rash, itch and eventual blister formation.

Clinically, pemphigoid gestationis presents as itchy lesions or annular plaques that usually form blisters. Characteristically

it starts in the periumbilical area and then spreads to the rest of the abdomen and sometimes the thighs, palms and soles. It is intensely itchy, interfering with sleep, and continues throughout the pregnancy. After

TABLE 2. CHARACTERISTICS OF THE SPECIFIC DERMATOSES OF PREGNANCY

Condition	Onset	Features	Maternal risk	Fetal risk	Recurrence in subsequent pregnancies	Treatment
Atopic eruption of pregnancy (previously prurigo of pregnancy)	<ul style="list-style-type: none"> • Before third trimester 	<ul style="list-style-type: none"> • 20% have personal or family history of atopy (eczema, asthma, hayfever) • 80% have first episode of eczema in pregnancy • Ig E elevated (20 to 70%) 	No	No	Yes	<ul style="list-style-type: none"> • Moisturisers • Oral anti-histamines • Mid-potency corticosteroids • Antibiotics if infected • Light treatment
Polymorphic eruption of pregnancy (PEP; previously known as PUPPPs)	<ul style="list-style-type: none"> • Third trimester in primigravidas • 10 to 15% of cases occur immediately postpartum 	<ul style="list-style-type: none"> • Itchy rash starting in stretch marks on abdomen • Sparing of umbilicus and usually face • Biopsy to rule out pemphigoid gestationis 	No	No	Rare	<ul style="list-style-type: none"> • Oral anti-histamine • Mid-potency corticosteroids • Systemic corticosteroids if extreme
Pemphigoid gestationis	<ul style="list-style-type: none"> • Second, third trimesters • 25% of cases occur immediately postpartum • May flare postpartum with menses or oral contraceptives 	<ul style="list-style-type: none"> • Itchy lumps and blisters, initially involving umbilicus, then generalising • Specific biopsy findings (subepidermal blister with linear IgG and C3 along basement membrane) 	<ul style="list-style-type: none"> • Long-term increased risk of thyroid disease (Graves' disease) 	<ul style="list-style-type: none"> • Small for gestational age • Prematurity 	Yes	<ul style="list-style-type: none"> • Oral anti-histamine • Topical corticosteroids • Oral corticosteroids
Intrahepatic cholestasis of pregnancy	Late second and third trimesters	<ul style="list-style-type: none"> • Severe itch • Can start on palms and soles, then generalise • Total serum bile acids raised 	<ul style="list-style-type: none"> • Early induction of labour • Intra-partum haemorrhage • Long-term risk of hepatobiliary disease 	<ul style="list-style-type: none"> • Prematurity • Meconium-stained amniotic fluid • Respiratory distress • Intrauterine death • Vitamin K deficiency and coagulopathy in mother and newborn 	Yes	<ul style="list-style-type: none"> • Oral antihistamines • Urodeoxycholic acid if severe • Early delivery if over 36/40 weeks' gestation • Vitamin K



the birth, the course is variable; it may resolve immediately, flare in the postnatal period or continue for months, flaring with each menstrual period.¹¹ It may also worsen with the use of oral contraceptives. Most cases eventually remit spontaneously in the weeks or months after the birth. Pemphigoid gestationis tends to recur in subsequent pregnancies.

Referral to a dermatologist may be required for confirmation of the diagnosis and management. Skin biopsy specimens show classic histopathological features (subepidermal blister formation), and direct immunofluorescence shows linear depositions of IgG and C3 complement along the basement membrane.^{10,11} Women with mild disease may be treated with a moisturiser and a potent topical corticosteroid, but most require a systemic corticosteroid 0.5 mg/kg. Those with very severe or persistent disease may require a systemic

immunosuppressant such as cyclosporin A, dapsone or azathioprine.

GPs need to be aware of the potential fetal risks in women with pemphigoid gestationis. There is a small risk of premature birth and small-for-gestational-age babies, and 10% of newborns may develop a mild urticarial or hive-like rash or blisters.⁵

Pemphigoid gestationis can be associated with other autoimmune diseases in the mother, such as Graves' disease, Hashimoto's thyroiditis and pernicious anaemia.¹¹ GPs may need to monitor for the adverse effects of topical or systemic corticosteroids and for associated autoimmune diseases. Oral prednisone is considered safe during lactation.



Figures 5a and b. Atopic eruption of pregnancy in a woman at 13 weeks' gestation.



Figure 6. Polymorphic eruption of pregnancy.

Intrahepatic cholestasis of pregnancy

Intrahepatic cholestasis of pregnancy (ICP) is characterised by severe itch with no rash but rather secondary signs of scratching. It begins in the third trimester of pregnancy, often starting on the palms and soles and spreading to the rest of the body. It is diagnosed by the finding of elevated serum bile acid and aminotransferase levels. It is a significant condition to be aware of as it is associated with fetal risks, the most common being premature birth (in 20 to 60% of cases), intrapartum fetal distress (20 to 30%) and stillbirth (1 to 2%).⁷ In women with severe or prolonged ICP, cholestasis can cause vitamin K deficiency and coagulopathy in both the woman and the newborn.⁵ These pregnancies should be carefully monitored by an obstetrician.

ICP usually resolves one to two days after the birth but in some cases can persist for one to two weeks.⁷ Up to 50 to 70% of cases recur during subsequent pregnancies and with the use of oral contraceptives.

Treatment of ICP aims to lower the level of serum bile acid and to alleviate the severe

1. AUSTRALIAN CATEGORISING SYSTEM FOR PRESCRIBING MEDICINES DURING PREGNANCY

- A = Safety established in human studies
- B = Human data minimal (B1 – studies in animals show no problems; B2 – studies in animals lacking, but available data show no increased occurrence of fetal damage; B3 – studies in animals have shown risk and significance of this in humans is uncertain)
- C = Drugs which have caused or may be suspected of causing harmful effects
- D = Unsafe – evidence of risk that may in certain clinical circumstances be justified
- X = Contraindicated

itch. Ursodeoxycholic acid can be used and has been shown to improve pregnancy outcomes.¹² Phototherapy is sometimes used. Cholestyramine, antihistamines and oral corticosteroids have also been tried as treatments but are not supported by current evidence and can have side effects. Early delivery may be required.

Skin medications in pregnancy and breastfeeding

For most skin conditions, topical medications are the safest choice and the first-line treatment. Percutaneous absorption of topical medications is estimated to be 4 to 25%.¹⁰ Selected systemic treatments may be used after consideration of their safety ratings and the high-risk periods during pregnancy (Box 1 and Table 3). Isotretinoin, acitretin and methotrexate are

absolutely contraindicated throughout the entire pregnancy and should be ceased before conception (to be discussed in more detail in a future article of this series). The safety of many skin medications during pregnancy and breastfeeding is summarised in the Appendix (included in the website version of this article, www.medicinetoday.com.au).^{2,13}

Conclusion

Women who are pregnant or breastfeeding may develop a variety of skin conditions, ranging from benign conditions associated with the pregnancy to pregnancy-specific skin rashes that may present maternal or fetal risks. GPs play a pivotal role in the diagnosis, management and timely referral when required of pregnant women with skin conditions. A confident understanding of skin medications and their safety ratings assists in the management of skin conditions during pregnancy and breastfeeding. **MT**

References

A list of references is included in the website version of this article (www.medicinetoday.com.au).

COMPETING INTERESTS: None.

TABLE 3. PERIODS OF FETAL DEVELOPMENT¹³

Development stage	Time after conception
Preimplantation	0 to 2 weeks
Embryonic/organogenesis*	Until 12 weeks
Fetal	From 13 weeks
Peripartum	Last month of gestation

* Most important time to avoid teratogenic medications. Brain, teeth and bones remain susceptible after 9 weeks of fetal development. Note that home pregnancy tests may not give a positive result until 5 weeks after conception.

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Appendix

TGA RECOMMENDATIONS ON USE OF SKIN MEDICATIONS DURING PREGNANCY AND LACTATION ^{2,13-15}			
Category	Medication	Pregnancy*	Lactation
Topical anti-inflammatories	Topical corticosteroids	A, except mometasone (B3) and methylprednisolone aceponate (C) Topical corticosteroids are safe in pregnancy (avoid large amounts of high potency corticosteroids for prolonged periods)	Can apply to nipple; apply after breastfeeding; ointments preferred over creams
	Calcipotriol	B1 <100 g/week; use on small area only	Safe; use on <20% body surface area; do not apply to chest area to prevent infant consumption
	Calcipotriol 50 µg/g + betamethasone 500 µg/g	B1	Avoid to prevent infant consumption
	Pimecrolimus	B3; do not use in pregnancy	Not known if secreted in milk; do not apply to nipple as oral absorption high
	Desonide	B3	Caution in lactation
	Dithranol	B2	Avoid
Topical antibiotics	Clindamycin	A	Not recommended
	Erythromycin	A	Caution
	Azelaic acid	B1	Safe
	Metronidazole	B2	Safe
	Mupirocin	B1	Safe
	Benzyl benzoate	B2	Safe
Antibiotics	Amoxicillin	A	Detected in breast milk
	Azithromycin	B1	No data; use if no alternative
	Cephalosporins	A, B1-2	Safe
	Erythromycin (not erythromycin estolate)	A (erythromycin estolate may cause maternal hepatotoxicity in second trimester ¹⁴)	Excreted in breast milk; linked to increased probability of pyloric stenosis in infants ¹⁵
Topical antifungals	Nystatin	A	Caution
	Clotrimazole	A	Safe
	Miconazole	A	Safe
	Terbinafine	B1	Safe
	Selenium sulfide	Not categorised; local application acceptable	Safe; cases of lactate suppression reported

continued on next page

TGA RECOMMENDATIONS ON USE OF SKIN MEDICATIONS DURING PREGNANCY AND LACTATION^{2,13} continued

Category	Medication	Pregnancy*	Lactation
Systemic antifungals	Griseofulvin	B3; avoid	Avoid
	Ketoconazole	B3; avoid	Avoid
	Itraconazole	B3; avoid	Avoid
	Terbinafine	B1; avoid; postpone treatment of onychomycosis	Avoid
Antipruritics – first generation†	Chlorpheniramine	A (preferred over second generation antipruritics; avoid in first trimester)	Safe; observe for sedation
	Diphenhydramine	A	Safe; observe for sedation
Antipruritics – second generation	Loratadine	B1 (first-line second-generation antihistamine)	Safe; observe for sedation, tachycardia, dry mouth
	Cetirizine	B2 (second-line to loratadine)	Safe; observe for sedation
	Fexofenadine	B2 (use alternatives as minimal data)	Safe; observe for sedation
Systemic antivirals	Aciclovir	B3 (first line)	Caution; use only if benefits outweigh risks
	Valciclovir	B3 (second line)	
	Famciclovir	B1 (third line)	
Systemic anti-inflammatories	Corticosteroids	A; short courses (around 2 weeks) are safe; doses >10 mg/day for over 2 weeks during first 12 weeks of pregnancy have been associated with oral/palate clefts; longer courses of oral corticosteroids may affect growth rate; monitor maternal blood pressure and urine for diabetes	Safe; penetrates breast milk poorly; small doses, short periods; if dose >20 mg then use prednisolone rather than prednisone; defer feeding for 4 hours after dose if possible
	Dapsone	B2; associated with hyperbilirubinaemia and haemolytic anaemia; reserved for specific cases	Excreted in breast milk in substantial amounts
	Ciclosporin	C; avoid unless severe disease; risk of fetal growth restriction or prematurity and maternal hypertension	Avoid or monitor infant levels
Biologics	TNF alpha inhibitors	Can be used with caution for severe recalcitrant psoriasis, but it is uncertain whether routine use is advisable	Insufficient data to address safety
Wart treatments	Trichloroacetic acid	Not categorised; second line after destructive treatment	Probably safe
	Imiquimod	B1 (minimal data, no teratogenicity)	Not recommended, no data
	Salicylic acid	Not categorised; use on small areas for short time is acceptable	Likely safe
Scabies + lice treatments	Permethrin	B2; first line for scabies	Safe
	Pyrethrin	B2; second line	Safe
	Malathion	B2	
	Precipitated sulfur	Likely safe	Likely safe
	Ivermectin	B3; use in compelling circumstances only	If topical permethrin fails then ivermectin can be used, but discontinue breastfeeding

continued on next page

APPENDIX. TGA RECOMMENDATIONS ON USE OF SKIN MEDICATIONS DURING PREGNANCY AND LACTATION^{2,13} continued

Category	Medication	Pregnancy*	Lactation
Acne treatments	Tretinoin (topical)	D (large studies indicate it is safe, but most experts do not recommend it)	Likely safe; unlikely absorbed in large quantities
	Benzoyl peroxide	Unclassified; may be used on small areas; metabolised to benzoic acid, a food additive	Likely safe
Hair, cosmetic treatments	Minoxidil (topical)	C	Safe
	Eflornithine	B3	Caution
	Spironolactone	B3; avoid male feminisation	Possible suppression of lactation
	Hydroquinone	Avoid; uncategorised	Probably safe
	Botulinum toxin A	B3; unlikely to cross placenta as high molecular weight, but cosmetic use not recommended	Not recommended
Cosmetic surgery products	Lignocaine	A	Safe
	Chlorhexidine	A	
	Adrenaline (epinephrine)	A	Excreted in breast milk
	EMLA (lignocaine 2.5% and prilocaine 2.5%)	A	Safe

* Category according to the Australian categorising system for prescribing medicines during pregnancy: A = safety established in human studies; B = human data minimal (B1 – studies in animals show no problems; B2 – studies in animals lacking, but available data show no increased occurrence of fetal damage; B3 – studies in animals have shown risk and significance of this in humans is uncertain); C = drugs which have caused or may be suspected of causing harmful effects; D = unsafe – evidence of risk that may in certain clinical circumstances be justified; X = contraindicated.

† If a first-generation antipruritic is too sedating then a second-generation antipruritic can be considered. Antihistamines can be associated with an increased risk of retrolental fibroplasia in premature infants if used within two weeks of delivery.