Pityriasis Rosea: Diagnosis and Treatment

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Pityriasis rosea is a common self-limiting rash that usually starts with a herald patch on the trunk and progresses along the Langer lines to a generalized rash over the trunk and limbs. The diagnosis is based on clinical and physical examination findings. The herald patch is an erythematous lesion with an elevated border and depressed center. The generalized rash usually presents two weeks after the herald patch. Patients can develop general malaise, fatigue, nausea, headaches, joint pain, enlarged lymph nodes, fever, and sore throat before or during the course of the rash. The differential diagnosis includes secondary syphilis, seborrheic dermatitis, nummular eczema, pityriasis lichenoides chronica, tinea corporis, viral exanthems, lichen planus, and pityriasis rosea–like eruption associated with certain medications. Treatment is aimed at controlling symptoms and consists of corticosteroids or antihistamines. In some cases, acyclovir can be used to treat symptoms and reduce the length of disease. Ultraviolet phototherapy can also be considered for severe cases. Pityriasis rosea during pregnancy has been linked to spontaneous abortions. (*Am Fam Physician.* 2018;97(1):38-44. Copyright © 2018 American Academy of Family Physicians.)

Pityriasis rosea is a self-limiting skin condition that presents as discrete scaly papules and plaques along the Langer lines (cleavage lines) over the trunk and limbs. This generalized rash is usually preceded by a herald patch on the trunk.[1,2] The incidence is 170 cases per 100,000 persons per year.[2] It typically affects persons 10 to 35 years of age.[2] Some studies report that males and females are equally affected,[3] whereas others report that females are affected more often.[2] Data on seasonal variation are conflicting, but studies show a higher prevalence during winter.[2,3]

Etiology

The epidemiology and clinical course of pityriasis rosea suggest an infectious etiology. Temporal case clustering, which indicates infectious transmission, has been documented in regression analysis models.[4] Bacterial agents have not been linked to pityriasis rosea.[5] A viral etiology was proposed after intranuclear and intracytoplasmic virus-like particles were observed by microscopy. An increase in CD4 lymphocytes and Langerhans cells in the dermis also suggest a viral etiology.[6] The most common viruses linked to pityriasis rosea are human herpesvirus-6 and -7 (HHV-6 and -7). HHV-6 typically affects children by two years of age, whereas HHV-7 typically affects children by six years of age.[6] Roseola infantum (exanthema subitum) is a common presentation of these viruses in children.[7] The

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CME **This clinical content** conforms to AAFP criteria for continuing medical education (CME). See CME Quiz on page 12.

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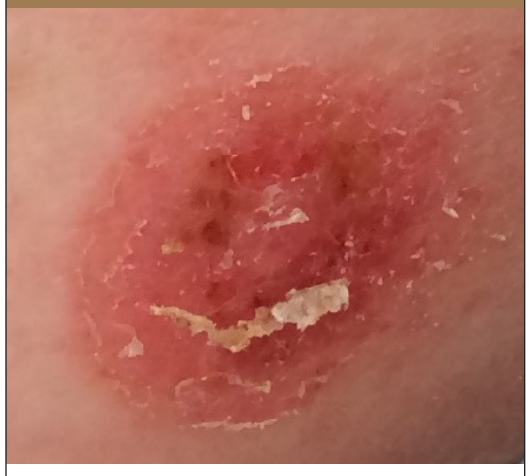
WHAT IS NEW ON THIS TOPIC

Pityriasis Rosea

Although a small 2000 study of erythromycin suggested possible benefits for pityriasis rosea, subsequent studies concluded that erythromycin and other macrolides are ineffective.

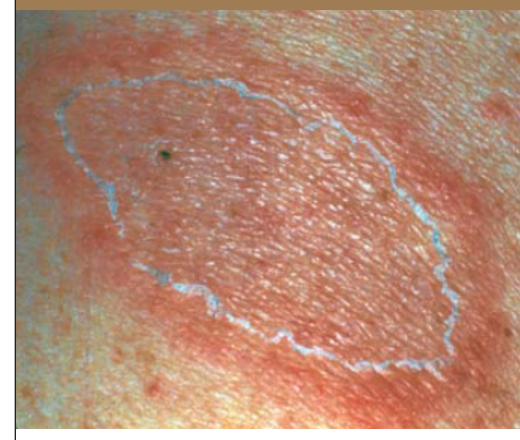
Several randomized controlled trials found that acyclovir, 400 to 800 mg five times per day, improves symptoms and lesion resolution in severe cases.

FIGURE 1



Erythematous herald patch with slightly elevated scaling borders.

FIGURE 2



Herald patch with collarette of scale at the margin.

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development of pityriasis rosea later in life suggests reactivation of these viruses.[6,8]

However, the studies linking HHV-6 and -7 with pityriasis rosea are conflicting and small. Early polymerase chain reaction studies did not detect active viral DNA in patients with pityriasis rosea, despite their having positive antibodies to HHV-6 and -7.[9] A later study using a calibrated quantitative real-time polymerase chain reaction assay found active HHV-6 and -7 in plasma and skin samples.[10] Only HHV-7 was found in the peripheral blood mononuclear cells. Another study using polymerase chain reaction testing with specific primers found active HHV-6 and -7 in plasma and tissue samples.[11] Electron microscopy detected HHV particles in various stages of morphogenesis in 71% of the 21 patients studied.[12] Serologic studies have been of limited value because of their inability to determine acute vs. previous infection.[6,9,11,13]

Clinical Presentation

CLASSIC

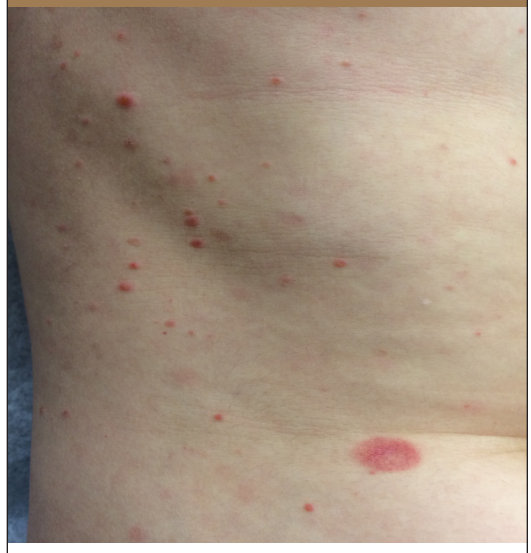
The diagnosis of pityriasis rosea is based on clinical and physical examination findings. Classic pityriasis rosea starts with a herald patch on the trunk *(Figures 1 and 2*[1]*)* in up to 90% of cases.[3] The patch is erythematous with slightly elevated scaling borders and a lighter depressed center. It can measure 3 cm or more in diameter and may be the only skin manifestation for approximately two weeks.[3] Prodromal symptoms (e.g., general malaise, fatigue, nausea, headaches, joint pain, enlarged lymph nodes, fever, sore throat) present before or during the course of the rash in 69% of patients.[6] The generalized rash, also known as the secondary eruption, presents on the trunk along the Langer lines *(Figures 3 and 4*[1]*, and Figures 5 through 7*[1]*)* and may extend to the upper arms and upper thighs.[2,3] These lesions are smaller than the herald patch and can continue to appear up to six weeks after the initial eruption.[2] A rash on the back may have a "Christmas tree" pattern, whereas a rash on the upper chest may have a v-shaped pattern

SORT: KEY RECOMMENDATIONS FOR PRACTICE

Clinical recommendation	Evidence rating	References
Symptoms of pityriasis rosea can be managed with oral or topical corticosteroids or oral antihistamines.	C	2
Macrolide antibiotics have no benefit in the management of pityriasis rosea.	B	41-44
Acyclovir is effective in the treatment of pityriasis rosea and may be considered in severe cases.	B	39, 45-49

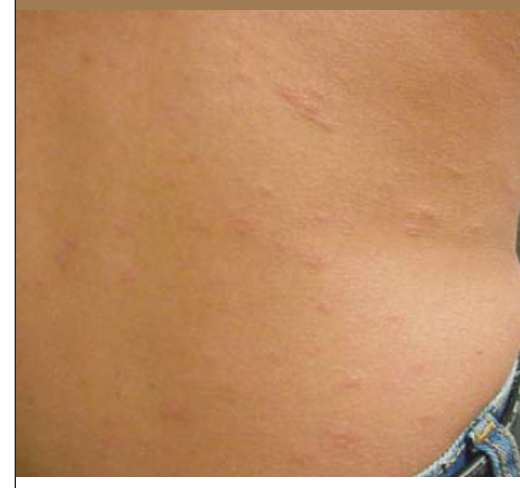
A = consistent, good-quality patient-oriented evidence; **B** = inconsistent or limited-quality patient-oriented evidence; **C** = consensus, disease-oriented evidence, usual practice, expert opinion, or case series. For information about the SORT evidence rating system, go to http://www.aafp.org/afpsort.

FIGURE 3



Typical pityriasis rosea rash on the trunk with associated herald patch.

FIGURE 4



Classic pityriasis rosea with associated herald patch.

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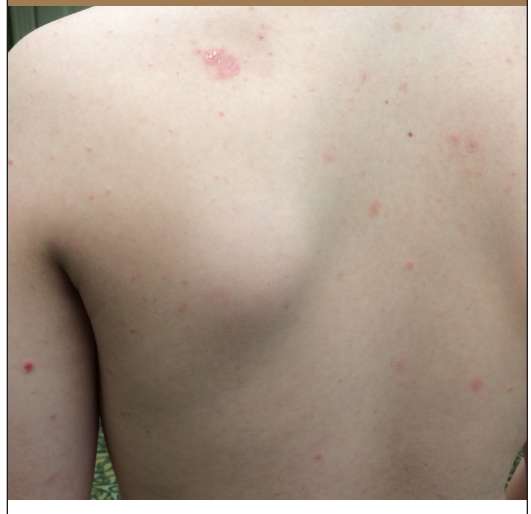
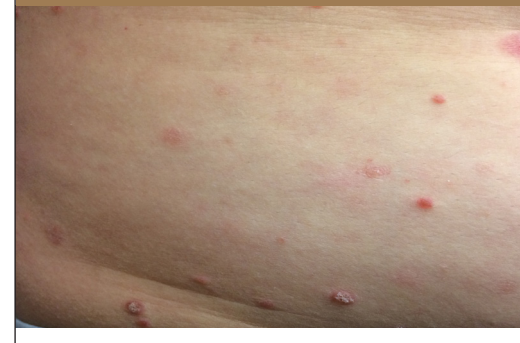
FIGURE 5



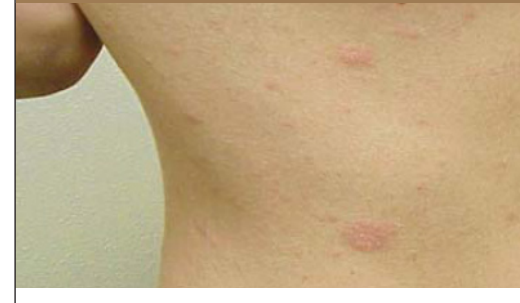
Generalized rash on the trunk along the Langer lines.

FIGURE 6



Generalized rash on the trunk.

FIGURE 7



Typical oblong trunk lesions of pityriasis rosea.

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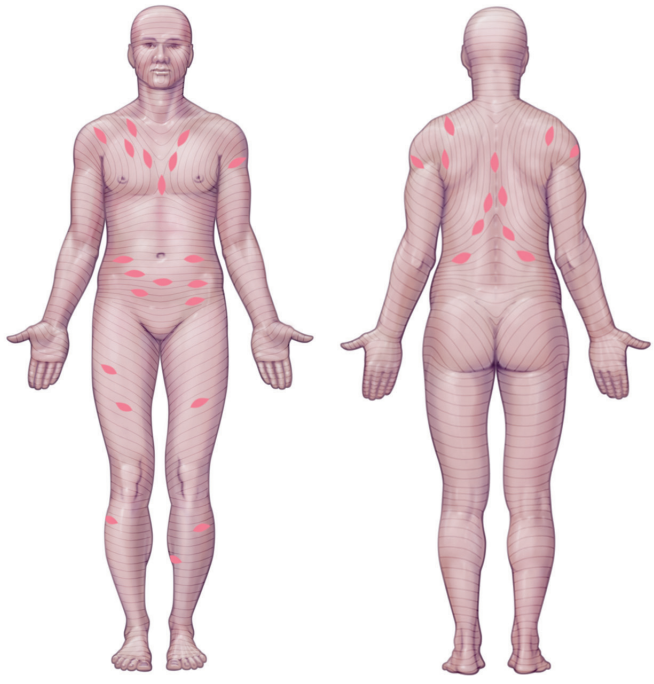
(Figure 8).[1] The mean duration of the rash is 45 days; however, it can last up to 12 weeks.[2,3] Moderate to severe pruritus occurs in 50% of patients.[2]

ATYPICAL

Atypical pityriasis rosea has a different rash distribution, morphology, size, and number of lesions. In pityriasis rosea gigantea of Darier, the patient has fewer and larger lesions. Inverse

FIGURE 8



Lesions aligning along Langer lines.

Illustration by Scott Bodell

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pityriasis rosea predominantly involves the face, axillae, and groin. Pityriasis rosea of Vidal presents with large patches on the axillae or inguinal region.[1,3]

RELAPSES

Relapsing pityriasis rosea lacks a herald patch, and the lesions may be smaller or fewer than in the initial episode.[3] The low relapse rate, between 1.8% and 3.7%, suggests the development of immunity.[2,8] The relapse typically occurs within five to 18 months of the initial episode.[3,8]

SPECIAL POPULATIONS

Pityriasis rosea in children presents similarly to that in adults. Pruritus has been reported more often in this population.[14] Black children have more facial (30%) and scalp involvement (8%), and postinflammatory pigmentary changes (62%).[15]

Differential Diagnosis

The differential diagnosis of pityriasis rosea includes several conditions *(Table 1)*.[1,3,7] If the diagnosis is uncertain, skin biopsy will help exclude other pathologies.[3] The histology of pityriasis rosea will usually show focal parakeratosis, spongiosis, and acanthosis in the epidermis, and extravasated red blood cells with perivascular infiltrates of lymphocytes, monocytes, and eosinophils in the dermis.

Case reports have documented pityriasis rosea–like eruptions associated with certain medications *(Table 2)*.[1,16-38] In these cases, the rash is more extensive and pruritic than in classic pityriasis rosea, and the histopathology is distinct. Some case studies report the presence of dermal eosinophil infiltrates.[3]

Treatment

The self-limited course of pityriasis rosea allows for watchful waiting and symptomatic treatment of pruritus in most patients. Treatment with oral antihistamines or topical or oral corticosteroids is advised based on expert consensus and low potential for harm.[2,39] Patients with more severe disease or those who choose active treatment should weigh the potential benefits of faster resolution against the adverse effects associated with these therapies.

MACROLIDES

A pseudo-randomized, double-blind, placebo-controlled trial of 90 patients showed complete resolution of pityriasis rosea after six weeks in 73% of those treated with oral erythromycin.[40] However, a larger open-label study of 184 patients followed for eight weeks was not able to replicate those findings.[41] Studies of azithromycin (Zithromax) and clarithromycin (Biaxin) with six weeks of follow-up did not show benefit in the treatment of pityriasis rosea.[42-44]

ANTIVIRALS

Antiviral medications have been studied for the treatment of pityriasis rosea because of its link

with HHV-6 and -7. Cidofovir (Vistide) and foscarnet may be effective against these viruses, but they have more adverse effects than acyclovir.[45] In small studies with fewer than 100 patients, those who took acyclovir, 800 mg five times per day for seven days, had significant improvements in symptoms and lesion resolution.[39,46-48] Lower doses (400 mg three to five times per day

TABLE 1

Differential Diagnosis of Pityriasis Rosea

Condition	Distinguishing characteristics
Lichen planus	1- to 10-mm, sharply defined, flat-topped violaceous papules typically on wrists, lumbar region, shins, scalp, glans penis, and mouth; lesions may be asymptomatic
Nummular eczema	Grouped small vesicles and papules 4 to 5 cm in diameter; round or coin-shaped lesions with an erythematous base and distinct borders, often on shins and backs of hands; pruritus is often intense
Pityriasis lichenoides chronica	Red-brown papules with central mica-like scales randomly arranged on trunk and proximal extremities with chronic, relapsing course; hypo- or hyperpigmentation may be present after lesions resolve
Pityriasis rosea–like eruption associated with medications	Similar presentation to pityriasis rosea, but lesions resolve after causative medication is discontinued (Table 2)
Seborrheic dermatitis	Orange-red or gray-white skin with greasy or white dry scaling macules, papules, or patches; diffuse scalp involvement with marked scaling; worsens in winter because of dry conditions; pruritus increases with perspiration
Secondary syphilis	0.5- to 1-cm, pink to brownish-red, round to oval macules and papules on the trunk, palms, and soles; patchy, "moth-eaten" alopecia on the scalp and beard area; mucous membrane involvement with round or oval patches covered by hyperkeratotic white to gray membrane
Tinea corporis	Scaling, sharply marginated plaques of various sizes with or without pustules or vesicles along the margins; lesions present with peripheral enlargement and central clearing, producing an annular configuration with concentric rings or arcuate lesions
Viral exanthems	Diffuse maculopapular erythema; mucosal involvement with microulcerative lesions, palatal petechiae, or conjunctivitis; systemic findings of lymphadenopathy, hepatomegaly, and splenomegaly

Information from references 1, 3, and 7.

TABLE 2

Medications Associated with Pityriasis Rosea–Like Eruptions

Adalimumab (Humira)
Allopurinol
Arsenic compounds
Asenapine (Saphris)
Atenolol
Bacille Calmette-Guérin therapy
Barbiturates
Bismuth
Bupropion (Wellbutrin)
Captopril
Clonidine
Clozapine (Clozaril)
Ergotamine
Etanercept (Enbrel)
Gold compounds (e.g., auranofin [Ridaura])
Hepatitis B vaccine
Imatinib (Gleevec)
Influenza (H1N1) vaccine
Interferon alfa-2a
Isotretinoin
Ketotifen (Zaditor)
Lamotrigine (Lamictal)
Lisinopril
Nortriptyline (Pamelor)
Omeprazole (Prilosec)
Pneumococcal polysaccharide vaccine (Pneumovax)
Rituximab (Rituxan)
Smallpox vaccine
Terbinafine (Lamisil)
Yellow fever vaccine

Information from references 1, and 16 through 38.

for seven days) also were effective in small randomized controlled trials that followed patients for up to four weeks.[39,49] Two studies of acyclovir given in the first week after rash development had conflicting results.[46,47] However, acyclovir appears to be a reasonable treatment option for severe cases of pityriasis rosea.

PHOTOTHERAPY

Two small studies found improvements in severity and symptoms in patients with pityriasis rosea who received ultraviolet B phototherapy multiple times per week for up to four weeks.[50,51] Another study of 15 patients with extensive disease used low-dose ultraviolet A phototherapy two or three times per week until resolution or no further improvement of the rash.[52] Most patients had notable improvement after the second or third treatment. Pruritus was reduced in 12 of 15 patients.

Pityriasis Rosea in Pregnancy

Pregnant women are more susceptible to pityriasis rosea because of their altered immune response.[3] One case series of 61 pregnant women with pityriasis rosea found a 13% overall rate of spontaneous abortion. The rate was 57% in patients who developed pityriasis rosea in the first 15 weeks of gestation.[53,54] Treatment with acyclovir can be considered,[39] although more studies are needed to clarify its potential benefits.

This article updates a previous article on this topic by Stulberg and Wolfrey.[1]

Data Sources: PubMed Clinical Queries, Essential Evidence, UpToDate, and the Cochrane Database of Systematic Reviews were searched using the term pityriasis rosea. Search dates: October and November 2016, and August 2017.

Figures 1, 3, 5, and 6 provided by Claire Price Rogers, MSPAC, PAC. Figure 2 provided by the Good Samaritan Family Practice Residency Program. Figures 4 and 7 provided by the Utah Valley Family Practice Residency Program.

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References

1. Stulberg DL, Wolfrey J. Pityriasis rosea. *Am Fam Physician*. 2004;69(1):87-91.
2. Chuh AA, Dofitas BL, Comisel GG, et al. Interventions for pityriasis rosea. *Cochrane Database Syst Rev*. 2007;(2):CD005068.
3. Drago F, Ciccarese G, Rebora A, Broccolo F, Parodi A. Pityriasis rosea: a comprehensive classification. *Dermatology*. 2016;232(4):431-437.
4. Chuh AA, Molinari N, Sciallis G, Harman M, Akdeniz S, Nanda A. Temporal case clustering in pityriasis rosea: a regression analysis on 1379 patients in Minnesota, Kuwait, and Diyarbakir, Turkey. *Arch Dermatol*. 2005;141(6):767-771.
5. Chuh AA, Chan HH. Prospective case-control study of chlamydia, legionella and mycoplasma infections in patients with pityriasis rosea. *Eur J Dermatol*. 2002;12(2):170-173.
6. Rebora A, Drago F, Broccolo F. Pityriasis rosea and herpesviruses: facts and controversies. *Clin Dermatol*. 2010;28(5):497-501.
7. Wolff K, Johnson RA, Saavedra AP, Roh EK. *Fitzpatrick's Color Atlas and Synopsis of Clinical Dermatology*. 8th ed. New York, NY: McGraw Hill Medical; 2017.
8. Drago F, Ciccarese G, Rebora A, Parodi A. Relapsing pityriasis rosea. *Dermatology*. 2014;229(4):316-318.
9. Chuh AA, Chiu SS, Peiris JS. Human herpesvirus 6 and 7 DNA in peripheral blood leucocytes and plasma in patients with pityriasis rosea by polymerase chain reaction: a prospective case control study. *Acta Derm Venereol*. 2001;81(4):289-290.
10. Broccolo F, Drago F, Careddu AM, et al. Additional evidence that pityriasis rosea is associated with reactivation of human herpesvirus-6 and -7. *J Invest Dermatol*. 2005;124(6):1234-1240.
11. Canpolat Kirac B, Adisen E, Bozdayi G, et al. The role of human herpesvirus 6, human herpesvirus 7, Epstein-Barr virus and cytomegalovirus in the aetiology of pityriasis rosea. *J Eur Acad Dermatol Venereol*. 2009;23(1):16-21.
12. Drago F, Malaguti F, Ranieri E, Losi E, Rebora A. Human herpes virus-like particles in pityriasis rosea lesions: an electron microscopy study. *J Cutan Pathol*. 2002;29(6):359-361.
13. Vág T, Sonkoly E, Kárpáti S, Kemény B, Ongrádi J. Avidity of antibodies to human herpesvirus 7 suggests primary infection in young adults with pityriasis rosea. *J Eur Acad Dermatol Venereol*. 2004;18(6):738-740.
14. Gündüz O, Ersoy-Evans S, Karaduman A. Childhood pityriasis rosea. *Pediatr Dermatol*. 2009;26(6):750-751.
15. Amer A, Fischer H, Li X. The natural history of pityriasis rosea in black American children: how correct is the "classic" description? *Arch Pediatr Adolesc Med*. 2007;161(5):503-506.

16. Brzezinski P, Chiriac A. Uncommon presentation of pityriasis rosea after yellow fever inoculation. *JAMA Dermatol*. 2014;150(9):1020-1021.
17. Polat M, Uzun Ö, Örs I, Boran Ç. Pityriasis rosea-like drug eruption due to bupropion: a case report. *Hum Exp Toxicol*. 2014;33(12):1294-1296.
18. Makdisi J, Amin B, Friedman A. Pityriasis rosea-like drug reaction to asenapine. *J Drugs Dermatol*. 2013;12(9):1050-1051.
19. Papadavid E, Panayiotides I, Makris M, et al. Pityriasis rosea-like eruption associated with lamotrigine [published correction appears in *J Am Acad Dermatol*. 2013;69(3):500]. *J Am Acad Dermatol*. 2013;68(6):e180-e181.
20. Bangash HK, Finch T, Petronic-Rosic V, Sethi A, Abramsohn E, Lindau ST. Pityriasis rosea-like drug eruption due to nortriptyline in a patient with vulvodynia. *J Low Genit Tract Dis*. 2013;17(2):226-229.
21. Sezer E, Erkek E, Cetin E, Sahin S. Pityriasis rosea-like drug eruption related to rituximab treatment. *J Dermatol*. 2013;40(6):495-496.
22. Lai YW, Chou CY, Shen WW, Lu ML. Pityriasis rosea-like eruption associated with clozapine: a case report. *Gen Hosp Psychiatry*. 2012;34(6):703.e5-703.e7.
23. Atzori L, Pinna AL, Mantovani L, et al. Cutaneous adverse drug reactions to allopurinol: 10 year observational survey of the dermatology department—Cagliari University (Italy). *J Eur Acad Dermatol Venereol*. 2012;26(11):1424-1430.
24. Chen JF, Chiang CP, Chen YF, Wang WM. Pityriasis rosea following influenza (H1N1) vaccination. *J Chin Med Assoc*. 2011;74(6):280-282.
25. Guarneri C, Polimeni G, Nunnari G. Pityriasis rosea during etanercept therapy. *Eur Rev Med Pharmacol Sci*. 2009;13(5):383-387.
26. Rajpara SN, Ormerod AD, Gallaway L. Adalimumab-induced pityriasis rosea. *J Eur Acad Dermatol Venereol*. 2007;21(9):1294-1296.
27. Güleç A, Albayrak H, Kayapinar O, Albayrak S. Pityriasis rosea-like adverse reaction to atenolol. *Hum Exp Toxicol*. 2016;35(3):229-231.
28. Scheinfeld N. Imatinib mesylate and dermatology part 2: a review of the cutaneous side effects of imatinib mesylate. *J Drugs Dermatol*. 2006;5(3):228-231.
29. Brazzelli V, Prestinari F, Roveda E, et al. Pityriasis rosea-like eruption during treatment with imatinib mesylate: description of 3 cases. *J Am Acad Dermatol*. 2005;53(5 suppl 1):S240-S243.
30. Aydogan K, Karadogan SK, Adim SB, Tunali S. Pityriasis rosea-like eruption due to ergotamine: a case report. *J Dermatol*. 2005;32(5):407-409.
31. Atzori L, Ferreli C, Pinna AL, Aste N. 'Pityriasis rosea-like' adverse reaction to lisinopril. *J Eur Acad Dermatol Venereol*. 2004;18(6):743-745.
32. Gaertner EM, Groo S, Kim J. Papular spongiotic dermatitis of smallpox vaccination: report of 2 cases with review of the literature. *Arch Pathol Lab Med*. 2004;128(10):1173-1175.
33. Sasmaz S, Karabiber H, Boran C, Garipardic M, Balat A.Pityriasis rosea-like eruption due to pneumococcal vaccine in a child with nephrotic syndrome. *J Dermatol*. 2003;30(3):245-247.
34. Durusoy C, Alpsoy E, Yilmaz E. Pityriasis rosea in a patient with Behçet's disease treated with interferon alpha 2A. *J Dermatol*. 1999;26(4):225-228.
35. Gupta AK, Lynde CW, Lauzon GJ, et al. Cutaneous adverse effects associated with terbinafine therapy: 10 case reports and a review of the literature. *Br J Dermatol*. 1998;138(3):529-532.
36. Buckley C. Pityriasis rosea-like eruption in a patient receiving omeprazole. *Br J Dermatol*. 1996;135(4):660-661.
37. George A, Bhatia A, Kanish B, Williams A. Terbinafine induced pityriasis rosea-like eruption. *Indian J Pharmacol*. 2015;47(6):680-681.
38. Gürel G, S¸ahin S, Çölgeçen E. Pityriasis rosea-like eruption induced by isotretinoin. *Cutan Ocul Toxicol*. 2017:1-3.
39. Chuh A, Zawar V, Sciallis G, Kempf W. A position statement on the management of patients with pityriasis rosea. *J Eur Acad Dermatol Venereol*. 2016;30(10):1670-1681.
40. Sharma PK, Yadav TP, Gautam RK, Taneja N, Satyanarayana L. Erythromycin in pityriasis rosea: a double-blind, placebo-controlled clinical trial. *J Am Acad Dermatol*. 2000;42(2 pt 1):241-244.
41. Rasi A, Tajziehchi L, Savabi-Nasab S. Oral erythromycin is ineffective in the treatment of pityriasis rosea. *J Drugs Dermatol*. 2008;7(1):35-38.
42. Amer A, Fischer H. Azithromycin does not cure pityriasis rosea. *Pediatrics*. 2006;117(5):1702-1705.
43. Pandhi D, Singal A, Verma P, Sharma R. The efficacy of azithromycin in pityriasis rosea: a randomized, double-blind, placebo-controlled trial. *Indian J Dermatol Venereol Leprol*. 2014;80(1):36-40.
44. Ahmed N, Iftikhar N, Bashir U, Rizvi SD, Sheikh ZI, Manzur A. Efficacy of clarithromycin in pityriasis rosea. *J Coll Physicians Surg Pak*. 2014;24(11):802-805.
45. Ehsani A, Esmaily N, Noormohammadpour P, et al. The comparison between the efficacy of high dose acyclovir and erythromycin on the period and signs of pitiriasis rosea. *Indian J Dermatol*. 2010;55(3):246-248.
46. Drago F, Vecchio F, Rebora A. Use of high-dose acyclovir in pityriasis rosea. *J Am Acad Dermatol*. 2006;54(1):82-85.
47. Ganguly S. A randomized, double-blind, placebo-controlled study of efficacy of oral acyclovir in the treatment of pityriasis rosea. *J Clin Diagn Res*. 2014;8(5):YC01-YC04.
48. Das A, Sil A, Das NK, Roy K, Das AK, Bandyopadhyay D. Acyclovir in pityriasis rosea: an observer-blind, randomized controlled trial of effectiveness, safety and tolerability. *Indian Dermatol Online J*. 2015;6(3):181-184.
49. Rassai S, Feily A, Sina N, Abtahian S. Low dose of acyclovir may be an effective treatment against pityriasis rosea: a random investigator-blind clinical trial on 64 patients. *J Eur Acad Dermatol Venereol*. 2011;25(1):24-26.
50. Leenutaphong V, Jiamton S. UVB phototherapy for pityriasis rosea: a bilateral comparison study. *J Am Acad Dermatol*. 1995;33(6):996-999.
51. Jairath V, Mohan M, Jindal N, et al. Narrowband UVB phototherapy in pityriasis rosea. *Indian Dermatol Online J*. 2015;6(5):326-329.
52. Lim SH, Kim SM, Oh BH, et al. Low-dose ultraviolet A1 phototherapy for treating pityriasis rosea. *Ann Dermatol*. 2009;21(3):230-236.
53. Drago F, Broccolo F, Zaccaria E, et al. Pregnancy outcome in patients with pityriasis rosea. *J Am Acad Dermatol*. 2008;58(5 suppl 1):S78-S83.
54. Drago F, Broccolo F, Javor S, Drago F, Rebora A, Parodi A. Evidence of human herpesvirus-6 and -7 reactivation in miscarrying women with pityriasis rosea. *J Am Acad Dermatol*. 2014;71(1):198-199.