

findings are always negative in pruritic urticarial papules and plaques of pregnancy (PUPPP), which is the main differential diagnosis of PG in pregnant women with urticarial eruption. Because accurate distinction between PUPPP and PG has important implications for fetal and maternal prognosis, diagnosis of PG requires DIF examination of a skin specimen.

To avoid skin biopsy in pregnant women with pruritic dermatoses, we evaluated the sensitivity and specificity of the detection of anti-BP180 antibodies by enzyme-linked immunosorbent assay (ELISA), with the aim of differentiating PG from PUPPP. We conducted a multicenter retrospective study including all pregnant women with a pruritic urticarial eruption suspected of PG or PUPPP, whose sera were analyzed between 2008 and 2014 in the immunology laboratory of Rouen University Hospital, which is a French reference center for autoimmune bullous diseases in France. Only patients with available clinical history, histologic findings, and DIF examination were included in this study. Sera were analyzed using the BP180 NC16A ELISA¹ (Euroimmun, Lubeck, Germany). The diagnosis of PG was made in patients with suggestive clinical features, a histologic picture of dermoepidermal blister, and/or margination of eosinophils along the DEJ, and DIF showing linear C3 and/or IgG deposits on the DEJ. The diagnosis of PUPPP was made in patients with pruritic urticarial eruption and negative DIF findings. The sensitivity, specificity, and positive and negative predictive values of the detection of anti-BP180 antibodies by ELISA were calculated. In all, 81 pregnant women of a mean age of 30.8 ± 5.5 years were included. According to the above-mentioned diagnostic criteria, 51 patients had PUPPP and 30 had PG. In all, 18, 2, and 10 patients had in vivo bound C3, IgG, and C3⁺ IgG deposits, respectively. Fourteen patients with PG had a histologic picture of subepidermal blister and 16 had a margination of eosinophils along the DEJ without histologic blister. Serum samples were obtained from all patients before treatment initiation. Anti-BP180 antibodies were detected in 29 of 30 sera from patients with PG, and in none of the 51 sera from patients with PUPPP. The sensitivity of BP180 NC16A ELISA was calculated at 97% (95% confidence interval 83%-100%), and its specificity at 100% (95% confidence interval 93%-100%). The positive and negative predictive values were 100% and 98%, respectively. Mean BP180 NC16A ELISA values of the 16 patients with PG and a histologic blister was 152 ± 60 IU, that of the 14 patients with PG and only a margination of eosinophils along the DEJ was 111 ± 52 IU ($P = .056$), and

that of patients with PUPPP was 0.098 ± 0.5 IU ($P < .001$).

Our findings showed a high sensitivity of BP180 ELISA in the detection of anti-BP180 antibodies in patients with PG. Indeed, the 97% sensitivity rate observed in the current study was close to the 86% and 96% rates reported in the literature.^{2,3} As expected, the mean BP180 ELISA values of patients with PG and a histologic blister was borderline significantly higher than those with no blister and much higher than patients with PUPPP.

Similarly, the specificity rate that we calculated at 100% was very close to the 96% rate reported by Powell et al.³ The consistent findings from 3 large studies strongly suggest that BP180 ELISA is a valuable test for diagnosis of PG or PUPPP, thus avoiding recourse to DIF examination in most pregnant patients with suspected PG or PUPPP. Moreover, BP180 ELISA results remain positive in patients already treated with topical corticosteroids, whereas DIF results might be negative in these patients.

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Presented at Les journées dermatologiques de Paris (the French Congress of Dermatology), December 2015.

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(Lille), Alain Taieb, MD, PhD (Bordeaux), Olivier Carpentier, MD (Roubaix), Pascal Schomoor, MD (Bordeaux), Michel D'Incan, MD, PhD (Clermont-Ferrand) who followed the patients.

Funding sources: None.

Conflicts of interest: None declared.

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<http://dx.doi.org/10.1016/j.jaad.2016.09.030>

Cutaneous fungal infections are commonly misdiagnosed: A survey-based study



To the Editor: Dermatophyte infections involving the skin, hair, or nails affect an estimated 25% of the world's population,¹ and accounted for 51 million outpatient visits over a 10-year period (1995-2004) in the United States alone.² Dermatophytosis is routinely managed by dermatologists, although given the diversity of clinical presentations, is sometimes misdiagnosed, which can result in inappropriate therapy, worsening of symptoms, and even additional skin and soft-tissue infections.³

An interactive survey of board-certified dermatologists was conducted at the 2016 Orlando Dermatology Aesthetic and Clinical Conference, during a seminar on superficial mycotic infections. The structure of the survey entailed reviewing a presentation of a clinical image followed by responding to a simple yes or no question: is this a fungal infection? Data were gathered anonymously via an audience response system and data tabulated using software (Excel, Microsoft, Redmond, WA).

The raw data of the survey are presented in Table I. In all, 13 cases were presented, and the results are summarized in Fig 1. Although the majority of the cases (8/13) were appropriately categorized by more than 50% of the audience, this

Table I. Participant responses to clinical images

Case	Diagnosis	n (%)	
		Yes	No
1	Secondary syphilis	16 (94.1)	1 (5.9)
2	Tinea corporis	7 (46.7)	8 (53.3)
3	Erosio interdigitalis blastomycetica	12 (70.6)	5 (29.4)
4	Tinea corporis	10 (52.6)	9 (47.4)
5	Tinea faciei	10 (58.8)	7 (41.2)
6	Pityriasis rosea	13 (76.5)	4 (23.5)
7	Tinea corporis	26 (86.7)	4 (13.3)
8	Majocchi granuloma	3 (13.0)	20 (87.0)
9	Tinea versicolor	18 (72.0)	7 (28.0)
10	Tinea pedis	22 (78.6)	6 (21.4)
11	Erythema annulare centrifugum	10 (33.3)	20 (66.7)
12	Woringer-Kolopp disease (pagetoid reticulosis)	12 (46.2)	14 (53.8)
13	Gram-negative toe web infection	2 (6.1)	31 (93.9)

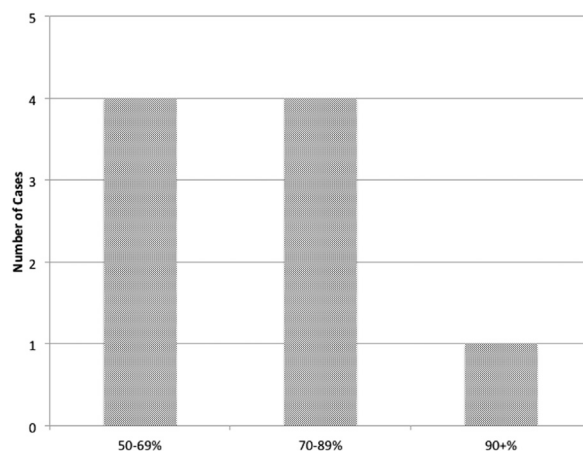


Fig 1. Number of cases where participants accurately categorized the pathology as either a dermatomycosis or not: organized in percent ranges.

percentage decreased as accuracy of categorization increased. For example, in only 4 of the 13 cases did audience members accurately categorize the cases with more than 75% accuracy. Moreover, there was only 1 case for which more than 90% of the audience appropriately categorized the case.

Study limitations include possible selection bias involving the attendees at the conference, a lack of a measurable response rate, and a small sample size, which prevent significant conclusions from being made. However, the results do emphasize the protean clinical nature of cutaneous dermatomycoses and the ease with which one may miss the correct diagnosis. Secondary syphilis, annular psoriasis, and pityriasis rosea are among just a few inflammatory