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Adult acne in women is not associated with a specific type of *Cutibacterium acnes*

To the Editor: Acne vulgaris in adult women is a well-known entity that may be distinguished from teenage acne. However, *Cutibacterium acnes* (*C acnes*), which is formerly named *Propionibacterium acnes*, has never been characterized in adult women with acne. The aim of this study was to compare the characteristics of *C acnes* (including phylotype, clonal complex, single-locus sequence typing (SLST) scheme, and resistance profile) between 2 groups with acne: adult women (defined as women aged 20 years or older) and adolescents/teenagers (individuals aged 11-18 years). Women older than 20 years were included to achieve adequate power.

In this prospective single-center study conducted over a 4-year period (2014-2017), the skin samples taken from patients with acne clinically confirmed by expert clinicians (M.S.J. or B.D.) and collected for *C acnes* bacteriologic analysis were selected. The study was approved by our local ethics committee, and all patients signed an informed consent to participate in the study. One sample per patient was taken from an inflammatory lesion with a cotton swab. All isolates were identified by matrix-assisted laser desorption/ionization time-of-flight mass spectrometry as previously described.[1] In vitro susceptibility was tested by using the disk diffusion method as previously reported. Phylotype was determined according to the method recently developed by Barnard et al.[2] SLST was performed on all isolates as described by Scholz et al.[3] Macrolide and tetracycline resistance were investigated as previously described. Wilcoxon and Fisher exact tests were used to compare both groups. Statistical significance was set at a P value less than .05.

A total of 100 bacteriologic samples were collected. After diagnoses other than acne (n = 18 samples) had been ruled out, 51 samples from adult women were compared with 31 samples from teenagers. Demographics and clinical data are summarized in Table I. The comparison of *C acnes* phylotypes and clonal complexes is detailed in Table II. There was no significant difference in the distribution of *C acnes* phylotypes, clonal complexes, or SLST (details not shown) between the groups (P = .36, .43, and .12 respectively). The results were unchanged (ie, no difference between the 2 groups) when the comparison was restricted to female teenagers versus adult women. Likewise, there was no difference between adult women and teenagers when we included only the subpopulation of women older than age 25 years (n = 28), corresponding to the definition of adult acne in women in the literature. Most *C acnes* strains identified in this study were fully susceptible: 70% in the adult women group and 61% in the teenager group, with no statistically significant difference (P = .59). There was no significant difference in the proportion of macrolide-, tetracycline-, and macrolide- and tetracycline-resistant strains between the 2 groups.

Table I. Demographic and clinical data of the 2 groups (adult women vs adolescents/teenagers)

Characteristics	Adult women (n = 51)	Adolescents/teenagers (n = 31)	*P* value*
Sex repartition, female/male, n	51/0	18/13	
Median age, y (range)	29.7 (20-50)	16.1 (11-18)	
Median GEA score	2.1	2.9	.007
Acne subtype persistent/late-onset, n	43/7		
Cosmetic use, n (%)	30 (59)	15 (48)	.37
Smoking, n (%)	11 (22)	6 (19)	1
Previous systemic treatments			
Tetracyclines, n (%)	32 (63)	24 (77)	.22
Isotretinoin, n (%)	19 (37)	13 (42)	.82
Previous topical antibiotic use, n (%)	19 (37)	7 (23)	.22

GEA, Global Evaluation Assessment.
**P* value less than .05 is considered significant.

Table II. Comparison of *C acnes* phylotypes and clonal complexes in the 2 groups (adult women vs adolescents/teenagers)

Bacteriologic results	Adult women (n = 51)	Adolescents/ teenagers (n = 31)	*P* value*
Sampling area, n face/back	45/0	29/2	
C acnes identification, n (%)	47 (92)	23 (74)	
C acnes phylotype, n (%)			
IA1	32 (68)	19 (83)	.36
IB	5 (11)	1 (4)	
IC	1 (2)	0	
II	9 (19)	2 (8)	
III	0	1 (4)	
C acnes clonal complex, n (%)			
CC3	1 (2)	1 (4)	.43
CC18	25 (53)	15 (68)	
CC28	6 (13)	1 (4)	
CC36	6 (13)	3 (12)	
CC43	0	1 (4)	
CC53	9 (19)	2 (8)	

C acnes, *Cutibacterium acnes*.
**P* value less than .05 is considered significant.

In this letter, we have reported what to our knowledge is the first time that adult acne in women is not related to a specific subtype of *C acnes* because no higher frequency of phylotype or clonal complex or SLST was identified. Previous studies have shown no difference in *C acnes* density on the face between women with early-onset (before age 21) acne and women with late-onset acne[4] or in the densities of the 3 predominant microorganisms (*Cutibacterium spp*, *Staphylococcus spp*, and *Malassezia spp*)[4] and women without acne.[5] In confirmation of recently published results, we found that IA1 was the predominant phylotype associated with acne. Interestingly, the frequency of *C acnes* resistance was similar among the adult women and teenager groups. Limitations of this study include small sample size and the possibility that prior acne treatments may have altered the patients' microbiomes. Our results suggest that differences between acne in adult women and teenagers are more likely related to nonmicrobial factors such as hormonal skin changes, stimulation of innate immunity, or environmental factors.

APPENDIX

Previous studies focusing on adult acne in women and *Cutibacterium acnes* were identified by using the electronic database PubMed with the following terms: *adult woman*, *acne*, and *Propionibacterium acnes* or *Cutibacterium acnes*. Each abstract was verified to identify previous studies. On the basis of this literature search strategy, we can assume that our study is the first report showing no link between adult acne in women and a specific subtype of *C acnes*.

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The proportion of nevus-associated invasive melanoma differs with Breslow thickness: A cross-sectional study of 1087 cutaneous melanomas

To the Editor: Although most melanomas appear de novo, a third of cases are nevus-associated melanomas (NAMs).[1] The proportion of NAMs appears to be slightly higher when the definition is based on information provided by the patient