Since January 2020 Elsevier has created a COVID-19 resource centre with free information in English and Mandarin on the novel coronavirus COVID-19. The COVID-19 resource centre is hosted on Elsevier Connect, the company's public news and information website.

Reply to: "Comment on 'Androgenetic alopecia present in the majority of patients hospitalized with COVID-19'"

To the Editor: It is a great pleasure to clarify questions about what is currently known about androgenetic alopecia (AGA) and coronavirus disease 2019 (COVID-19). I thank Bukovac and Makse for their interest in AGA during the pandemic.[1] Researchers are encouraged to continue the efforts to understanding of the impact of AGA, regional variations, and the use of androgen-modulating medications in COVID-19.

In the descriptive research letter,[2] the rates of AGA and age distribution in both sexes were reported among individuals admitted to the hospital due to severe COVID-19 only. It was not a comparative study, nor a study of "correlation with severity of COVID-19." The awareness of the high incidence of AGA triggered important contributions: increased risk for testing positive among men with full AGA.[3] Gabrin sign (Hamilton-Norwood scale [HNS] of 3-7) was associated with worse outcomes among men.[4]

A comprehensive comparison with previous studies was provided in the Supplemental Materials, (available via Mendeley at https://data.mendeley.com/datasets/jk63cthxbr/2), which included the following disclaimer: "Solid conclusions cannot be made by comparing studies performed at different decades with different populations. The comparison is meant for a general idea of what we know and we don't know. The hypothesis is still to be tested with age and ethnicity-matched controlled studies in patients with COVID-19…" (p. 1). Supplemental Table 3 from that article is provided here for convenience as Table I. Graphs about age-matched comparisons were published in another recent reply letter.[4]

Bukovac and Makse attempted interesting comparisons; however, they failed to report that the Supplemental Materials already provided many age-matched comparisons and details of limitations. For example, a gross comparison with an HNS of 4 to 7 was reported, despite the limitations stated in Table I. Further refinement could not be made. Bukovac and Makse speculated with age ranges or AGA classification data not present in the comparative data.

The wide-ranged "31% to 53%" made reference to the numeric estimation previously made by researchers reporting a preliminary observation of 41 men admitted for COVID-19, published in the *Journal of Cosmetic Dermatology*,[5] for "clinically significant AGA" (HNS of 3-7) on men with COVID-19 aged 23 to 79 years compared to a similar population. The estimation was not for HNS of 2 to 7, as Bukovac and Makše assumed. The comparison with HNS of 2 to 7 was present in the Supplemental Materials; specifically, and in detail, see Table I. Attempts to convert 2 different scales is intrinsically limited. For example: how could *vertex only* be converted to an HNS of 3v or HNS of 5? HNS has *3v* and *5* depicted with frontal involvement (not vertex only). It is advisable to use the raw data with different data sets that used the HNS. For example, in a study from India, 100% of the patients hospitalized because of COVID-19 had an HNS of 2 to 7 (raw data available via Mendeley at https://doi.org/10.17632/jdkx76y8fz.1),[4] which was higher than in the 3 Madrid hospitals.

Table I. Comparison by age range of the proportions of 122 men with androgenetic alopecia in the Madrid COVID-19 study versus the Severi et al* study

	<55 y	55-59 y	60-64 y	65-69 y
HNS† of 2-7, %				
Severi et al	62	66	80	85
Madrid COVID-19	70	79	89	90
HNS† of 4-7, %				
Severi et al	19	20	27	33
Madrid COVID-19	30	50	53	70

*Severi G, Sinclair R, Hopper JL, et al. Androgenetic alopecia in men aged 40-69 years: prevalence and risk factors. *Br J Dermatol*. 2003;149(6):1207-1213. doi:10.1111/j.1365-2133.2003.05565.x

†HNS of >1: Diagnosis of androgenetic alopecia, in Severi et al study reflected frontal only + vertex only + frontal and vertex. HNS of >3: Very severe cases of androgenetic alopecia (or HNS of 4-7) in the Madrid COVID-19 data compared to "frontal and vertex" of Severi et al. HNS of 4a (very severe frontal only) was not computed in the Severi et al numbers, and HNS of 3v (severe frontal with mild vertex involvement) was computed the in Severi et al numbers of the lower part of the table. The Madrid COVID-19 data did not classify 3 and 4 into subcategories, and the Severi et al data did not show the exact HNS scores.

The initial COVID-19 studies reported did not control for sex in the risk stratification. Now, male patients are known to be at increased risk. COVID-19 data can be refined by controlling for use of specific antiandrogens (such as spironolactone, finasteride, and dutasteride) and the presence of the Gabrin sign.

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