BJD
British Journal of Dermatology

Strong validation of ultrasound as an imaging biomarker in hidradenitis suppurativa

DOI: 10.1111/bjd.19433

Linked Article: Grand *et al.* Br J Dermatol 2020; https://doi.org/10.1111/bjd.19343

The clinimetrics of hidradenitis suppurativa (HS) are challenging, and hence a subject of considerable interest.[1] Thus, among the imaging biomarkers, ultrasound has been exponentially used for studying HS.[2,3]

In this issue of the *BJD*, the study by Grand *et al.*[4] provides strong support for the validity of ultrasound as a biomarker of HS. The authors look at both the structural and functional aspects of HS, including an ultrasound–histopathology correlation. This study extracted samples from selected lesional sites and found that the ultrasonographic measurements of the thickness of the epidermis and the diameter of the dermal tunnels present a high correlation with histology. Power Doppler is a tool for measuring the degree of inflammation by capturing the flow of lesional sites. Functionally, the intensity of power Doppler demonstrated a significant correlation with pain scores, abscesses, nodule counts, International HS Severity Scoring System score and the number of draining tunnels. Additionally, a significant correlation between power Doppler and dermal $CD3^+$ and $CD11c^+$ cell counts was found.[4]

Several studies have found a relevant discordance between clinical and ultrasonographic global scores of severity. These have been due to the clinical underestimation of severity and challenging descriptions of the lesions, as reported by investigators from different geographies and ethnicities.[3,5,6] Interestingly, in HS, ultrasound showed a higher interrater correlation in a multicentric study (0·87)[5] than clinical scores such as Hurley staging, modified Sartorius scoring, and abscess and nodule counts (0·37–0·61).[7,8]

Ultrasound provides a unique opportunity to fill part of the pathophysiological puzzle of HS, with reliable clinimetrics encompassing both anatomical and functional changes with the use of colour or power Doppler.[9] Moreover, the higher axial resolution of ultrasound compared with magnetic resonance imaging and computed tomography makes it the first-choice structural imaging technique in HS. Functionally, thermography has been proposed as a biomarker, but it is not as validated as ultrasound and lacks the anatomical correlation.[10]

As with any imaging modality, ultrasound requires proper equipment, trained operators and standardized protocols.[3] Encouragement for ultrasound training and the creation of multidisciplinary teams with dermatologists and radiologists are obvious first steps towards the daily integration of ultrasound into the management of HS. Currently, several opportunities for ultrasound training are available under the umbrella of international scientific societies such as the American Institute of Ultrasound in Medicine (www.aium.org) and the European Federation of Societies for Ultrasound in Medicine and Biology (www.efsumb.org).

Although further research is needed to reproduce the results of Grand *et al.*[4] in a multicentric context and with interrater correlations, this work expands the knowledge on HS and supports new lines of research on the management of the disease, including clinical trials. Lastly, as proven, ultrasound can support better clinical care in HS with early detection of structural abnormalities, more accurate staging and tracking of the degree of activity,[2–6,9] all of which would help provide appropriate medical and surgical management.

Acknowledgments: I would deeply like to thank Professor Dr Gregor Jemec (Department of Dermatology, Zealand University Hospital, Roskilde, Denmark) and Professor Dr Haley B. Naik (Department of Dermatology, University of California, San Francisco, USA) for their thoughtful feedback on this article.

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Conflicts of interest: The author declares they have no conflicts of interest.

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