Background: The BVAS is an established evaluation tool for patients with systemic vasculitis in clinical trials and increasingly in clinical practice, but its use requires training. Recently we have developed and tested an online training system based on a relatively small number of cases. Our objective was to create a large pool of representative training clinical vignettes for certification of proficiency in vasculitis assessment using real patient data derived from the Diagnostic and Classification Criteria in Vasculitis Study (DCVAS).

Methods: We extracted clinical items from the DCVAS case record form which could directly populate BVAS scoring and allow subsequent creation of clinical vignettes. As BVAS was not formally scored in DCVAS, we created rules to automate BVAS scoring from these variables. We developed a language tree for the identified variables to provide a variety of different terms coding to the same stem item in order that the terms could be randomly inserted into a clinical vignette that would allow clinicians to score BVAS; multiple phrases for each clinical item allowed us to enrich the diversity of the vignettes. We categorized the cases with respect to type of vasculitis and level of difficulty defined by extent and severity of the disease and confounder conditions.

Results: We created 2116 vignettes for BVAS assessment. We selected 20 of them by purposive sampling and these were scored by 10 independent clinicians (previously certified in clinical assessment of vasculitis) to test their validity. Individual scores were compared against the gold standard defined by the automated BVAS validated by an expert panel reviewing the original data. In the preliminary validation, mean percentage of agreement with the reference standard per case was 93.7% (85.6–97.6) with a mean time to completion of 2.5 (1.8–5.4) min. We identified some systematic errors of item attribution which enabled us to improve the language tree. Pass mark and time to completion appeared to correlate with the level of difficulty of the cases and was comparable to the non-automated case scenarios from the current training package.

Conclusion: We successfully applied a new methodology to automatically generate clinical vignettes from real patient data. In addition, we extracted the BVAS from the DCVAS data and used it in validation of the clinical vignettes, which proved to be applicable for the purpose...
of training in BVAS assessment. The larger set of vignettes will allow us to select cases for evaluation at random, providing a better training opportunity for clinicians. Automated vignette generation could be applied to other study databases and provide a novel tool to create data-driven training scenarios.

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