

SUMMARY AND CONCLUSION

So far, no curative therapy has been uniquely reported for vitiligo. Thus, concerning this obdurate disfiguring disorder, we are in a tangible need for a standardized method of assessment that can ideally witness its prognostic parameters.

Although the topic; “methods of vitiligo case assessment” involves many titles to be mentioned, methodological literature has been full of strong brawls arising on; “which tool of all is really efficient”. To compound troubles, no clear consensus was detected about the objectivity of those techniques.

In addition, a quick review of the most famous of those tools; the vitiligo area scoring index (VASI), can easily reveal that it does contain an element of subjectivity. The same is true regarding the vitiligo European task force (VETF) quantitative score. Furthermore, even with the tools proved to be exceedingly objective, such as digital image analysis (DIA), limited user-friendliness was demonstrated. Above and beyond, with simple manual procedures like the point counting technique (PCT), technical hitches can be met.

Luckily, a fair concordance could be recognized among many authorities regarding the parameters to be examined during an assessment session of a vitiligo lesion. These are mainly; the surface area (SA) of the lesion and evident color improvement.

In this study we tried to find a reasonable quantitative tool that could handle these parameters to get a numerical representation of each one of them.

On preparing for actual work, we touched the compulsory criteria needed in a new quantitative tool to be accepted by specialists of the field via an adapted Delphi questionnaire that targeted 25 dermatologists of varying levels of experience.

In addition, we selected a two-in-one DIA tool (an extended version of Adobe Photoshop[®] CS) and validated it in technical laboratory regarding the ability to measure SAs and color contrast within digital image records.

The chief strategy in the present study was to clinimetrically-challenge 3 techniques of a known capability to measure the SA of a skin lesion—simple visual observation (SVO) using digital image records, PCT, and digital image analysis for SA measurement (DIA_{SA}). In addition, we tested an innovated computerized technique capable of performing color analysis with the aid of digital images—that was digital image analysis for color measurement (DIA_{CM}).

A sample of 100 actual vitiligo lesion models was assessed using the SA measuring tools. For the color analysis procedure, another sample of 20 models was involved. Two observers (a dermatologist and a computer expert) were individually-accomplished to obtain the required measurements.

Regarding the 3 SA measuring techniques, the results showed that they are all accurate measuring tools. Verifying that accuracy by assessing the bias encountered with each technique, revealed that the ‘best accuracy’ was gained by DIA_{SA}, followed by the PCT. Inversely, The highest biases occurred with SVO.

The same grading of the 3 techniques was true regarding both intra- and inter-observer reliability (with DIA_{SA} being the most reliable, followed by PCT, and finally SVO).

Once more, ordering the 3 methods in the same way was right on testing ‘the sensitivity to change’; however, all of them were capable of detecting that a change had occurred in a right way.

Regarding the designated procedure of DIA_{CM}, it was also proved to be reliable. In addition, on testing a simulated account of accuracy (using the degree of correlation between results displayed on assessing the response of bilaterally symmetrical lesions to the same treatment modality), significant levels of agreement between results were also revealed.

It could be concluded that the tested DIA technique in the present study is valid to be incorporated with fair reliance into assessment sheets planned for vitiligo patients. With offering simplicity of application as well as commercial validity, this technique might also gain better user-friendliness than ever expected.

On the other hand, in absence of software facilities, the PCT could be a feasible alternate to DIA in assessing SA changes. The disadvantage of this tool is that it is only designed for SA measurement and it does not provide data about an improvement of color (unlike the DIA technique which could be designated to be a two-in-one tool). Additionally, it might be time consuming with large lesion areas.

Improving the objectivity of SVO via employing pre- and post-treatment digital image records including a scale marker for estimating the SA of imaged lesions), could make it a reasonable quick retrospective assessment tool. However, a high risk of bias does exist. The results of this study suggested that this method might be useful in daily clinical practice (as it is capable of offering good levels of both reliability and sensitivity).

However, on talking about research stems (for providing appropriate implements for evidence-based practice), SVO is better to be substituted by comprehensive DIA techniques.