

The Construct Validity of Dermoscopy in Measuring Vasculature of Hypertrophic Scars (HS)

Huan DENG, Cecilia LI

Department of Rehabilitation Sciences, The Hong Kong Polytechnic University, Hung Hom, Hong Kong

Background

- Vasculature of HS is an important indicator of scar maturation;
- As one of morphological imaging devices, the Dermoscopy is preliminarily supported to measure the vasculature of HS.

Aim

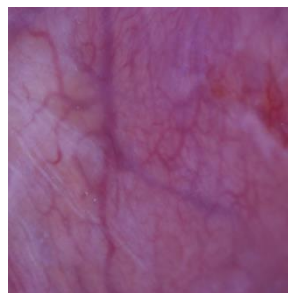
To explore the construct validity of Dermoscopy in measuring vasculature of HS.

Methods

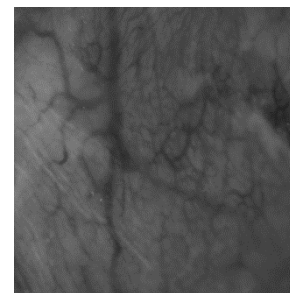
- This is an observational study and 20 patients with HS at different stages of maturation were recruited.
- Scar assessments were done at baseline and 1 month follow-up:
 - a) The Patient and Observer Scar Assessment Scale (POSAS)
 - b) The DermaLab Combo (scar colour)
 - c) The Dermoscopy (scar vasculature)

Results

Figure a: a image captured by the Dermoscopy;
Figure b: green channel of the captured image.
(Captured images are further processed in ImageJ.)



a



b

Patients information

	n=20
Age (mean ± SD, years)	31.15 ± 9.53
Gender	
- Male (%)	- 13 (65%)
- Female (%)	- 7 (35%)
Days post injury (mean ± SD, days)	171.15 ± 102.45
Cause of injury	
- Flame (%)	- 12 (60%)
- Scald (%)	- 4 (20%)
- Chemical (%)	- 4 (20%)
- Electric (%)	- 0 (0%)
Scar location	
- Upper limb (%)	- 6 (30%)
- Lower limb (%)	- 1 (5%)
- Trunk (%)	- 10 (50%)
- Head and neck (%)	- 3 (15%)

Correlations

	Baseline	
	Dermoscopy	
	Green Value	Vascular Density
POSAS		
- vasculature score	-0.740 ^{b**}	0.716 ^{b**}
DermaLab Combo		
- Erythema	-0.782 ^{a**}	0.783 ^{b**}
- a*	0.374 ^a	-0.391 ^b
1 month follow-up		
	Dermoscopy	
	Green Value	Vascular Density
POSAS		
- vasculature score	-0.846 ^{a**}	0.818 ^{b**}
DermaLab Combo		
- Erythema	-0.547 ^{a*}	0.567 ^{b**}
- a*	0.344 ^a	-0.328 ^b

^a Pearson correlation coefficient; ^b Spearman rank correlation coefficient.

** <0.01; * <0.05

Conclusion

Dermoscopy shows acceptable correlations with other valid vasculature measurement tools. Dermoscopy is feasible to measure vasculature of HS.

Contact Information

- huan.rs.deng@connect.polyu.hk
- cecilia.li@polyu.edu.hk