

EVALUATION OF WOUND RESIDENCE PROPERTIES AND PHYSICAL PROPERTIES OF NON-DRUG-LOADED POLY-(VINYL ALCOHOL)BORAX HYDROGELS IN LACERATIONS

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Aim: The aim of this project was to formulate and clinically evaluate an innovative semi- solid gel, to ascertain whether it could be used for the topical delivery of drug substances into lacerations.

Methods: Patients attending the emergency department with lacerations had a selected gel formulation applied and left for 5 minutes. Photographs were taken before, during and after treatment. A visual evaluation tool, using a rating scale numbered 1-5, was used to score the formulations on eight characteristics. The worse score being 40/40

Results:

Formulation	No. of Patients	Mean Score	Hardness (N)	Compressibility (N sec)	Adhesion (N cm ²)
1	5	19.5	12.2	10.88	0.85
2	5	10.6	8.60	7.87	1.01
3	5	9.0	5.42	4.93	1.48
4	5	15.5	4.17	3.80	1.69
5	5	26	2.75	2.53	1.79
6	4	16.8	1.46	1.34	2.67

Discussion: The third formulation was shown to have the most appropriate physical characteristics for use in the treatment of lacerations. Further development in drug loaded gels is underway matching these physical characteristics.