

## Oxidative Profile of Wounds treated with Chitosan Hydrogel

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Oxidative stress has been implicated in wound healing, especially in the inflammatory phase. In the recent years Chitosan started to be used in curatives for the treatment of some acute wounds. The aim of this work was to study the action of Chitosan hydrogel 2% in the wound healing process in mice considering the oxidative profile of the wounds. Isogenic Balb-c mice (20±2g, n=6) were submitted to a surgery for the withdrawal of skin of the back. They were divided into two groups: control group (CT) which did not receive any treatment and the treated group (QT) which received Chitosan Hydrogel 2% topically during 3, 6, 9 or 12 days. Gradually 6 animals were sacrificed and their wounds were analyzed then. QT presented wounds with levels of lipid peroxidation on the day 3, 6, 9, 12 and 15 decreased significantly when compared to CT (CT: 241.596±29.56, 321.84±20.25, 277.28±27.58, 384.56±29.42, 229.82±29.58; QT: 137.71±16.47, 136.22±21.82, 155.19±7.95, 183.47±7.95, 184.39±12.19 mmol.g<sup>-1</sup>, respectively). Curiously, the GSH content was increased significantly by the QT's treatment only on the 12<sup>TH</sup> day (CT: 241.596±29.56, 321.84±20.25, 277.28±27.58, 384.56±29.42, 229.82±29.58; QT: 137.71±16.47, 136.22±21.82, 155.19±7.95, 183.47±7.95, 184.39±12.19 mmol.g<sup>-1</sup>, respectively). The percentage of reduction of the lesions was very important in the QT group mainly on the days 3, 6, 9 and 12: CT: 0.5±0.04, 8.25±0.17, 38.42±0.49, 67.42±0.78; QT: 17.18±0.34, 45.22±0.13, 79.45±0.42, 97.11±0.82%, respectively). These findings indicate Chitosan Hydrogel 2% has an antioxidant potential and it must have contributed for the earlier conclusion of the wound healing process noted in QT.

Key words: wound healing, chitosan hydrogel, oxidative stress.