



ISSN: 1343-4292  
Volume 140, Issue 03, June, 2022

## **Effects of topical growth hormone on mitochondrial function during facial skin wound healing in rabbits**

## **ABSTRACT**

There are evidences supporting the use of growth hormone (GH) for cellular growth and wound healing. Also GH was found to act indirectly on mitochondrial biogenesis, likely in synergy with other growth factors. To examine the effects of GH on facial skin wound healing in rabbits and evaluate its effect on mitochondrial function. Thirty healthy rabbits included in this study classified into two groups group A: euthanized at day 7 and group B: euthanized at day 14 of study period, then each group subdivided into three subgroups: negative control group (normal rabbits), positive control group: full –thickness square shaped, 1 cm<sup>2</sup> wounds were excised in the forehead skin for each rabbit without any medication, treatment group: full –thickness square shaped 1 cm<sup>2</sup> wounds will excised in the forehead skin of each rabbit, then 0.1ml [1.2mg /3.6 IU] of GH will be injected subcutaneously around the wound area every other day. Following euthanasia, blood samples (5 mL) were collected from rabbits in all groups for analysis using lactate, pyruvate and L- carnitine detection kits. The clinical observations show that the wound closure rates were similar in the negative control, and treatment groups. On the day 14<sup>th</sup>, the wound closure rate in the treatment group was faster than other groups. Both serum Pyruvate and Lactate at the end of the 7<sup>th</sup> and 14<sup>th</sup> days showed a significant decrease in the treatment group when compared to co positive control group but its higher than in negative control group. While L- carnitine level showed a significant increase in the treatment group compared to positive control group but its less than negative control group. Local GH can affect mitochondrial function and accelerates facial skin wound healing.