

Effect of Antihistamine on Acceleration of Wound healing in Rabbits

Prepare By : Monjed Abu Malash

Abdel Hafeeth Shalabi

Supervised By: Dr. Nimer Khraim



Introduction

- Wound healing or wound repair is the natural process of regeneration of tissue after injured.

- The surgical intervention may need for treat of some diseases in animal .
- Because is more stress and painful for animal and may lead to decrease of productivity of animal and may cause more economic loss.

- Difficulty to keep the wound clean and control the contamination and infection.
- Especially in veterinary medicine and because the environment of the farm that not easy to control the infection as much as in OP and recovery room.

They are many step and factor affect on wound healing:

1. Inflammatory phase.



2. Prepare phase.



3. End or maturation phase

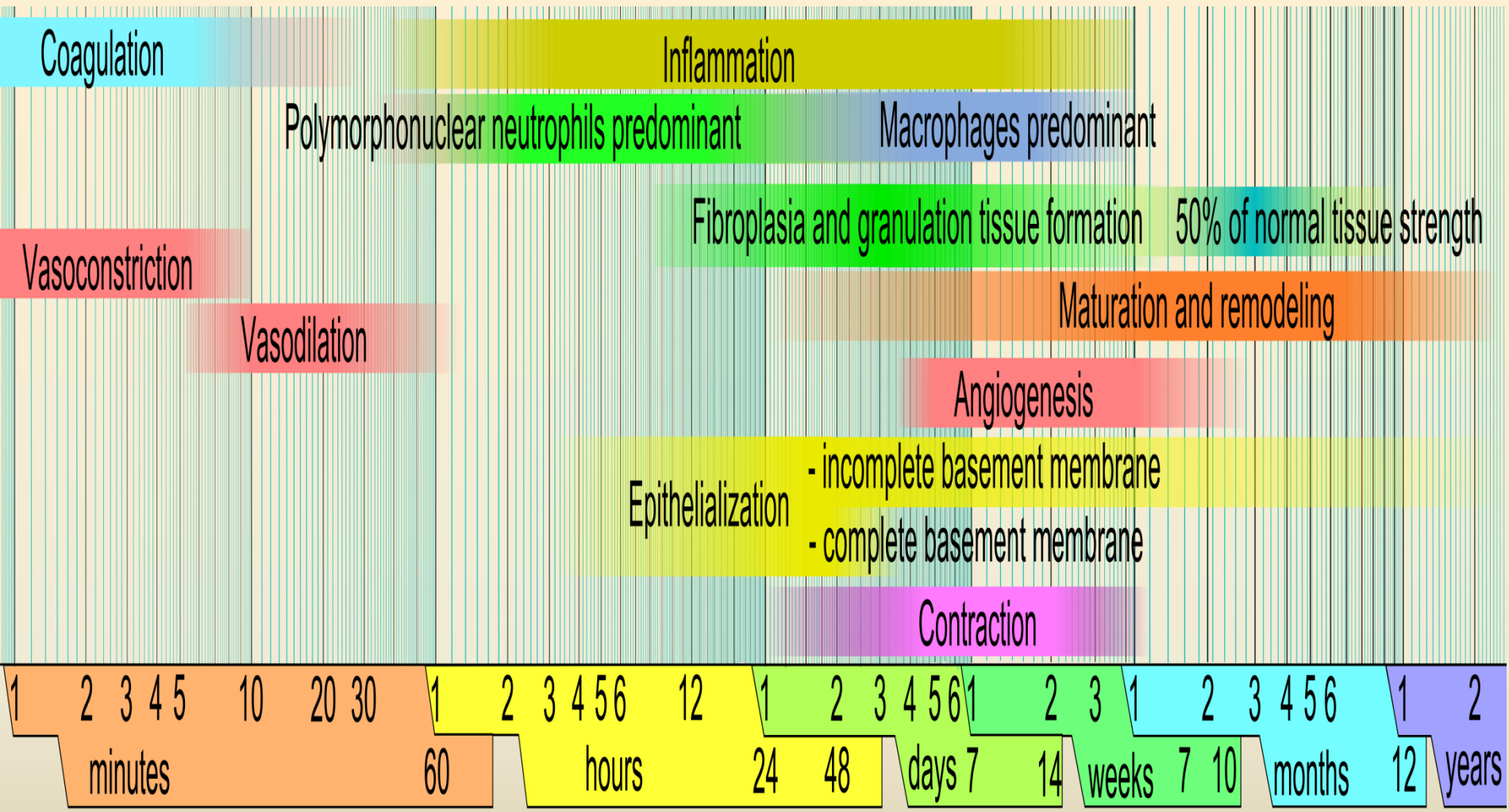
- The first phase is inflammatory phase
 - Vasoconstriction by serotonin and breydykinine
 - Vasodilatation by histamine and interleuki that release from mast cell

2. The second phase is prepare stage

A. The angiogenesis :new capillary growth .

B. Fibroplasias :proliferation of fibroblast to production and growth of collagen and at the end growth of epithelium cell in wound area .

3. The end phase of healing is maturation stage at this step increase of strength of wound area.



Hägström, Mikael (2014). "[Medical gallery of Mikael Häggström 2014](#)". *WikiJournal of Medicine* **1** (2). DOI:[10.15347/wjm/2014.008](#). ISSN [2002-4436](#). Public Domain (5).

- The histamine cause increase in vascular permeability and promote angiogenesis and lead to release and escape from capillary to tissue.
- There is many studies about histamine and other factor of wound healing and the affectivity on healing.

- Hypothesis :the effect of antihistamine on acceleration of wound healing .
- Antihistamine may block action of histamine by prevent binding of histamine with each receptor especially (H₁ and H₂ receptor) and decrease activity of histamine on wound area and may be lead delay the healing.

Methodology:

- 10 rabbit at weight about 1500g and age 4 month had been randomly selected and divided to tow groups ,first group was given antihistamine and second are use as control (placebo)

- (1) use general Anesthesia for rabbit
- (2) shaving the hair of rabbit
- (3) disinfected area at sit of skin incision
- (4) skin incision
- (5) antihistamine or plasebo injected at wound area

(6) suture the skin and measuring edge of wound

(7) daily investigation of heart rate ,respiratory rate, temperature of wound area and animal and epithelialization tissue for 14 days

Recommendation :

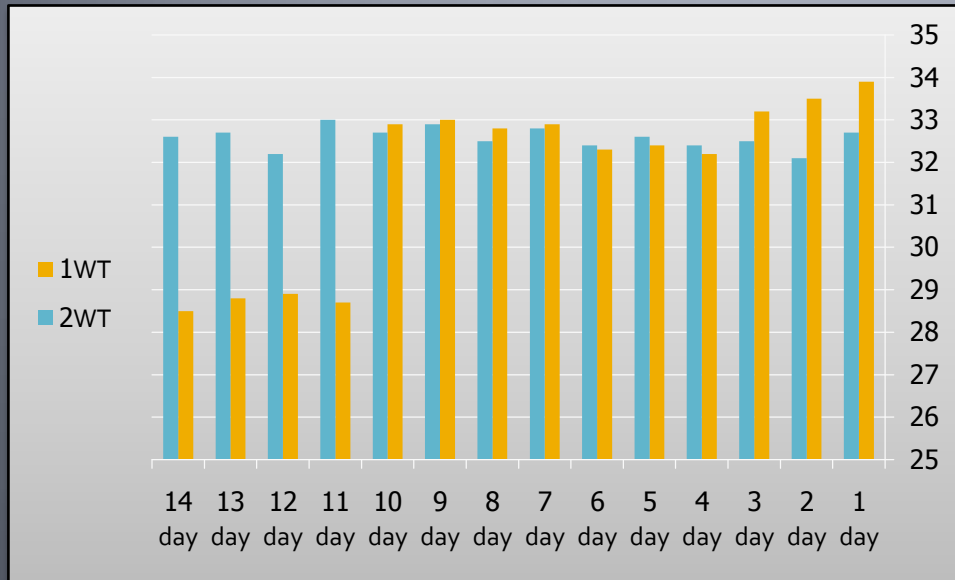




Worksheet for every single animal:

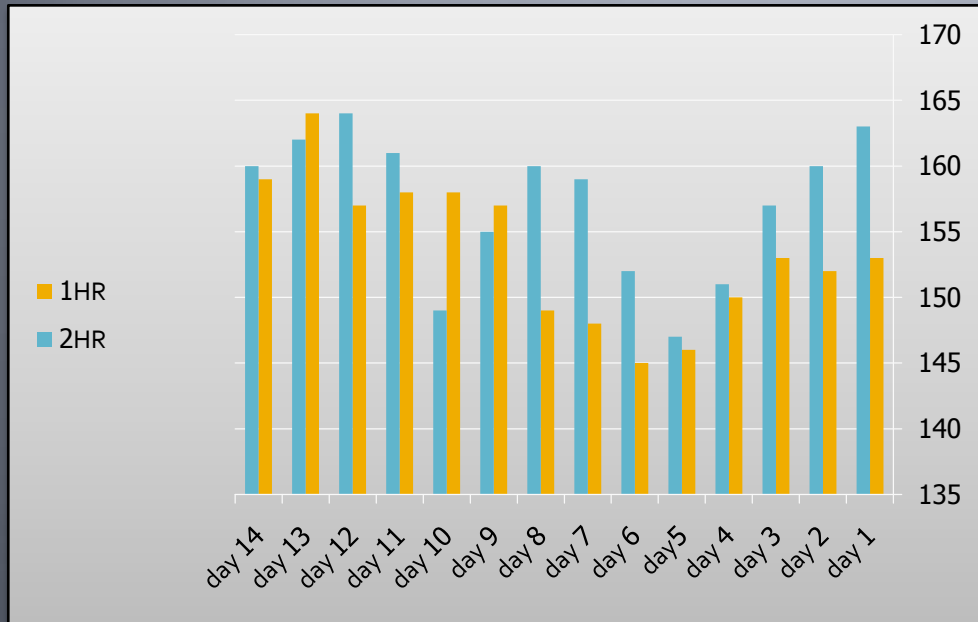
Exp. Time	Duration (min)		Note
11:00		Arriving to the farm	
11:05	5	Prepare the tools that want to use	
11:10	5	Catching the rabbit	
11:15	5	Shaving the abdomen region	
11:16	1	Clean the abdomen region	
11:18	2	General anesthesia application	
11:20	2	Disinfection the abdomen region	
11:25	5	Skin incision	
11:26	1	Antihistamine and normal saline is administration	
11:27	1	Suture the skin	
11:29	2	Administration of medication	
11:30	1	Put the animal in clean dry area	
Every step will be	recorded in specific	form for each animal	

Wound temperature:



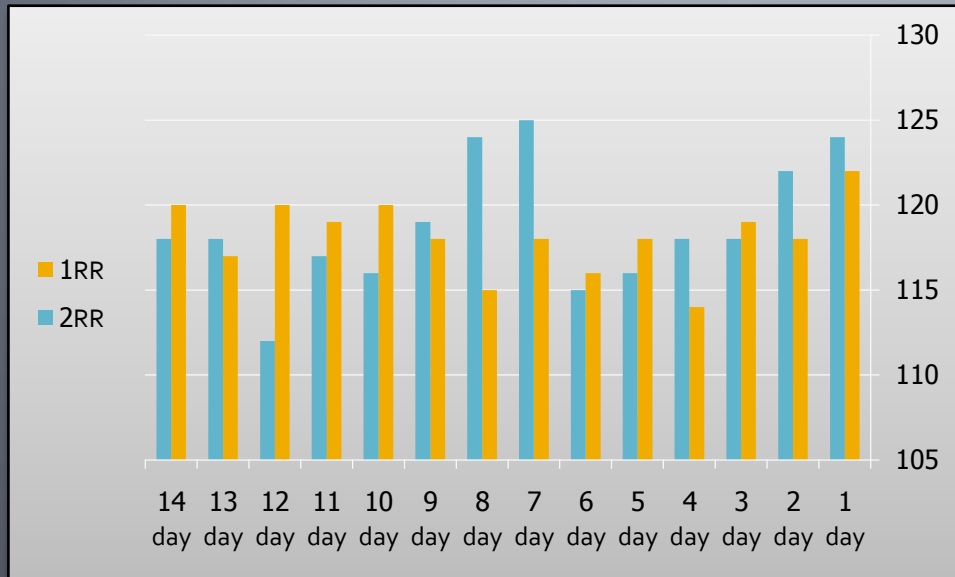
$p=0.061$

Heart rate:



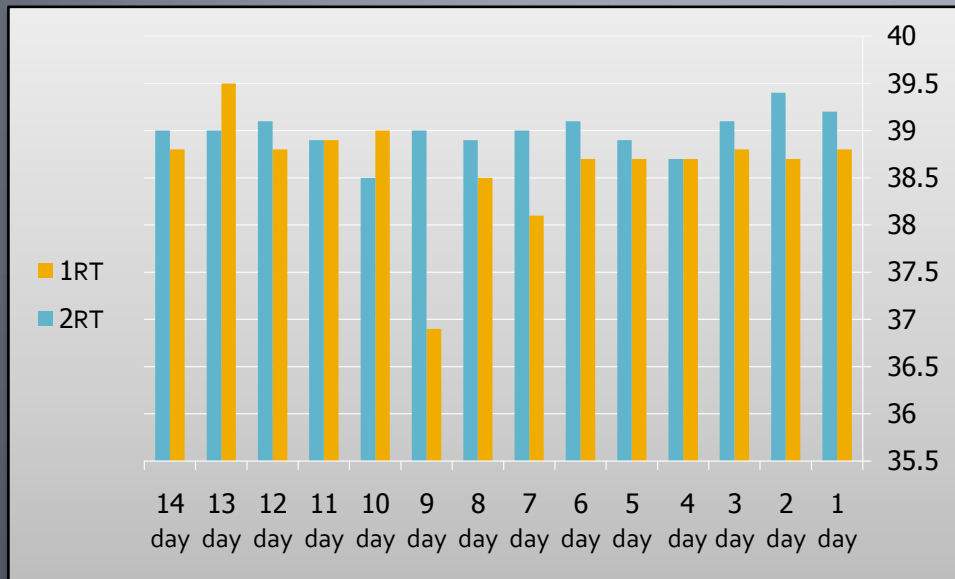
$p=0.045$

Respiratory Rate:



$p=0.313$

Rectal temperature:



$p=0.022$



- Recommendation : Histopathology must be done for more accuracy in result .

Decision

- Several research found on wound healing process to accelerate return the organs to normal structure and function as soon as after the surgery

- R.D ABROWSKI ,Cz. MASLINSKI and ALICJA OLCZAK on 1977 (The role of histamine in wound healing) .
- D.Gutowska in 2014 (histamine enhances keratenocyte_mediated resolution of inflammation by promoting wound healing and response of infection).

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3. R.D ABROWSKI ,Cz. MASLINSKI and ALICJA OLCZAK on 1977 (The role of histamine in wound healing) .
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