

**HONEY A BOOSTER FOR THE ACTIVITY OF ANTIBIOTICS**Samsom Mehari^{1*}, Gabriel Dawit²¹Ministry of Health Anseba Region, Department of Public Health, Eritrea-Keren.²Ministry of Health Anseba Region, Department of Pharmacy, Eritrea-Keren.

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*Received on: 07-05-2017; Revised on: 30-07-2017; Accepted on: 05-08-2017***ABSTRACT**

The objective of this study is to show the efficacy of honey as booster for the activity of antibiotics in wound healing for mothers who has done cesarean section (CS) during delivery. The study was prospective study for five months. The research was conducted for mother with sepsis after 7 days from the day CS has done. There were two groups one control group who took only antibiotic (Metronidazole + ceftriaxone + dressing with normal saline) and the other group (metronidazole + ceftriaxone + honey dressing). The symptom observed during the follow up on the wound are pus, smell, pain, hotness, wound length, swelling and tenderness. The follow up was for 12 days. The average time for disappearance of each symptoms of the wound was calculated. As a result, the average time for disappearing of the symptoms in patients under honey dressing are with much fewer days than patients without honey dressing

Keywords: honey, cesarean section, pus, smell, pain, swelling, hotness, tenderness**INTRODUCTION**

In this contemporary society people are calling honey for the one they love or like. But this has a reason in addition to its sweet taste because honey has a universal use for the purpose of medicine and cosmetics. On this research we are dealing about the support of honey as booster activity of antibiotics on wound healing for mother who has done cesarean section during their delivery. According to the latest researches done on honey the results reveals many facts about the health benefit of honey. It uses as a medicine for multiple symptoms and diseases. In this modern time advanced researches are going on about the contents of honey that responsible for the antimicrobial activity and about mechanisms of how honey facilitates for wound healing. The practice of honey as medicine was started before about 2000 BC. [1] Until the mid of 20th century the reports about the benefits of honey on wound healing and others medical uses was based on clinical observation. But from the last of 20th century till this moment

discoveries has done about honey on lab bases for the exact content and mechanism in which honey is healing for different kind of wound healing. As a result of this in 21st century there are plentiful scientifically sounded researches are going on that reveals and strengthens the science on the vital uses of honey.

These promising researches about honey gave a great hope for scientist to be a good weapon against these modern smart microorganisms. There is a vital support of honey to fight against the resistance of microorganisms for antimicrobial drugs, because the last battle could not be between human beings but among microorganisms and human beings. So honey right now is getting to be an antibiotic and a booster for the activity of antibiotics. Even though resistance is the most serious problem over the science of antibiotics, honey can also be a promising antibiotic to fight this strong science of microorganism (resistance) and to change the history of resistance to ward retarded speed of development. Science of

honey can also help for all society through its cost effective and 100% adherence as treatment and food.

Background

Honey is the product of a natural company which has only a single manager that is the queen bee. There are bees which so called workers which collect nectar from flower and for the purpose of food they produce honey. For the medical use honey has started in about 2000 BC. During this time honey was the universal item that is used as medicine and food. Honey has been used in traditional Chinese Medicine to treat many diseases for more than two thousand years. [2] A traditional medicine branch, called Apitherapy, has developed in recent years, offering treatments based on honey and the other bee products against many diseases. The antibacterial activity of honey was practicing before bacteria were identified as the cause of disease. Physicians were aware that particular types of honey were best for treating particular ailments. Dioscorides, c.50 AD, stated that a pale yellow honey from Attica was the best, being "good for all rotten and hollow ulcers". [3] The bioactive components in honey were established by research, and the wide dissemination of this knowledge, has led to a general acceptance that honey is a respectable therapeutic agent, and its usage by clinicians as well as by the general public became popular. The finding that there are multiple bioactive components involved in the therapeutic action makes it a much more attractive option to use the natural product rather than identify individual active components. [4]

The provision of glucose to the wound tissues is important also for allowing maximal activity of phagocytes to clear infecting bacteria. Glucose is essential for the 'respiratory burst' in macrophages, the reaction that generates hydrogen peroxide, the dominant component of the bacteria-destroying activity of these cells. [5] Infected wounds can be malodorous, especially those infected with anaerobic bacteria. But honey has been reported to give rapid deodorization of offensively smelling. [6]

Misuse of antibiotics, the emergence of resistant bacteria, and increasing interest in therapeutic honey have provided an opportunity for honey to be re-established as a broad-spectrum, antibacterial agent that is non-toxic to human tissue. Despite lack of promotional support from many medical organizations, interest in the use of honey in wound management has increased in recent years. [7] Even though some clinicians assign honey in category of worthless but harmless substance, but Honey has

been shown in clinical observations to have the ability to manage wound infection in situations where conventional antimicrobial have failed. Honey also has been found to be effective in vitro against a range of multi-resistant organisms including methicillin-resistant *Staphylococcus aureus* (MRSA), vancomycin-resistant Enterococci (VRE), and other multi-resistant Gram-negative organisms including *Pseudomonas aeruginosa*. [8]

Clinicians need reassurance that any health-related agent is safe and meets its stated therapeutic purpose. Therefore, it is important to emphasize that although natural in origin, the honey used in wound care should be of medical-grade standard and not from supermarket shelf. Medical grade honey is filtered, gamma-irradiated, and produced under carefully controlled standards of hygiene to ensure that a standardized honey is produced. [9] In a more recent report on honey treatment of wounds, ulcers and skin graft preservation, the importance of sterile, residue-free honey for medical use was pointed out. They advise to use honey derived from specified pathogen-free hives, which have not been treated with drugs, and are gathered in areas where no pesticides are used.

Honey produced in Eritrea is all polyfloral; there are two types of honey in Anseba region white and red honey. Red fresh (unprocessed) honey was used for our research purpose. It is collected from single place and at the same season. It has a long history for the use of honey as a treatment of various diseases like hepatitis, respiratory infections and topically application on wounds. As it is one of great foods in Eritrea it is most attractive and faithful treatment. Still today there is a wide distribution of traditionally use of honey in clinically settings of the country.

Objective: The objective is to show the efficacy of honey as a supportive agent for the activity of antibiotics in wound healing for mothers who has done cesarean section and became sepsis.

METHODOLOGY

Pilot study was done for 5 patient and motivated result to have found to conduct a further research. The study was prospective, started on 10 January 2016 up to 7 June 2016 for about five months.

Legal issue: The ethical consideration was asked and approved by ministry of health Anseba region. The patients (mothers) all five (5) in pilot study and ten (10) patients during the study consent have taken for

all of them. All the patients were agreed for applying honey on their wounds.

The sample was selected based on the following inclusive criteria.

1. Mothers who has done selective CS (i.e. CS done on appointment no emergency).
2. With the normal range of hemoglobin above 11-16mmHg
3. With no any chronic diseases (diabetic, hypertensive).
4. Mothers who took 2 gram of ampicillin prophylaxis pre-operative.
5. Become septic after seven days during the removal of suture.
6. Patients with the symptoms (pain, pus, smell, hotness, tenderness)

Study area: Study conducted in Keren hospital in MCH (Maternity clinic hospital) ward. The hospital is regional referral hospital with 200 beds.

Results

Table 1: Average Wound length and percentage of patients with Symptoms during the beginning.

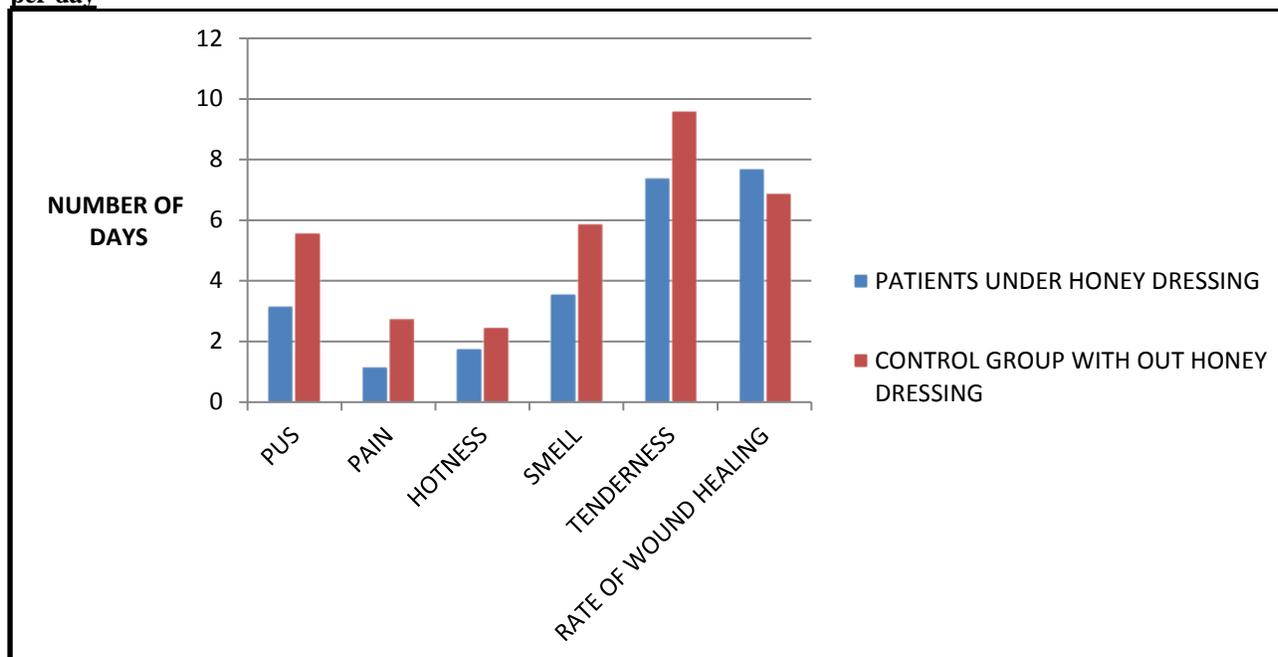
Wound length in mm	Pus	pain	hotness	Smell	tenderness
120mm	100%	100%	100%	100%	100%

Table.2 Mean average symptom disappearing time, rate of wound healing and total honey consumed.

symptoms	Patients under antibiotics and honey dressing (in days)	Patients under antibiotics only and normal saline dressing (in days)
Pus	3.2	5.6
Pain	1.2	2.8
Hotness	1.8	2.5
Smell	3.6	5.9
Tenderness	7.4	9.6
Rate of wound healing in millimeter per day	7.7	6.9
Total honey consumed	125grams	0grams

Sample size: There are 20 samples. All these are under the inclusive criteria these samples divided in to two groups 10 samples were control who took only antibiotics ceftriaxone 1g iv bid and metronidazole iv 1g tid plus normal saline dressing and other groups are 10 patients under study who took the same antibiotics (ceftriaxone 1g iv bid and metronidazole 1g iv tid) and dressing with honey by washing the wound with normal saline.

Questioner was prepared, that contain the demography, medical history after CS has done, and symptoms list for the follow up. After that the observation was on these symptoms. These symptoms are the core of this study. The observation of the symptoms was every 12 hours 7:00am and 7:00pm.

Graph 1. Graphical illustration of mean average symptoms disappearing time and wound healing rate in mm per day

DISCUSSION AND CONCLUSION

This research was conducted for strengthening the fact about medical use of honey. As a result of this research we can say that honey has an obvious advantage with cheap cost but even though it has miracle like reports about its wide range of medical use we could suggest honey to be used as independent medicine when the injuries and wounds are minor. For major and complicated wounds we use honey as adjuvant topically for sterilizing the surface of the wounds. Although sterility of wound is measured by disappearing of pus discharge and smell in our research next step is the responsibility of our body system to recover and close the wound. For that matter the nutritional status of our patients was our great challenge not to close their wound early. Because seven (7) of control group and eight (8) of

patients under honey dressing are came from remote rural areas and their living status is low for that reason they could not get enough nutritional food. In our observation we find nutrition has a great role for wound healing in cesarean section done mothers. Therefore honey has a great role in boosting the activity of antibiotics by sterilizing the wound, by blocking the entrance of bacteria and other infectious organism through forming biofilms and other contents responsible for the killing of infectious organism.

Acknowledgement

We thank for the almighty God for helping us to accomplish our research successfully. Next our grateful thank goes to Keren zonal referral hospital especially the maternity care hospital (MCH) staffs.

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