

Post-Operative Effects of Oral Honey In Patients of Prepyloric Perforation peritonitis A prospective Case Control Study.

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I. Introduction

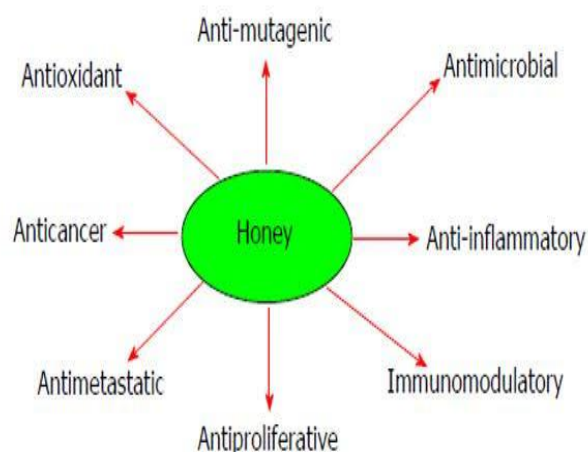
Here on throwing light over history of honey in cure of patient gives us a golden glimpse, honey has been well used for medicinal applications, many countries have used honey as remedy for every illness such as Indian, Islamic, Egyptians, Greek, Chinese and others. Honey was documented as a boon for soldiers wounded in battle fields in modern history and in world war 1.

Honey is made by honey bees from the natural sugar solutions called the nectar obtained from flowers or other secretions of plants and contains mixture of sugars. By addition of enzymes and evaporation of water in it, honey bees converts it into a sweet liquid.



It was the sweetening agent illustrious to the first man, and naturally found its way into traditions, rituals, customs, and food of Indian households.

It is the most valuable natural food and ensures to get the daily doses of essential nutrients like; carbohydrates, minerals, amino acids, proteins, and vitamins. Honey provides 3000 calories per kilogram and a table spoon of honey provides 100 calories; honey has nutritive value as well as healing properties over body wounds.



Van Ketel noted antimicrobial property of honey for the first time in 1892. The role of honey in healing of infected wounds was first reported in Europe and USA in the mid-20th century. However, application of honey has been reduced with introduction and wide application of antibiotics, again with advent of antibiotic resistant microbial agents and potent activity of honey against them renewed interest for its medical application.

Since then many studies were conducted and have shown that honey has several medicinal properties. Honey promotes autolytic debridement, has antimicrobial property, stimulates growth of wound tissue to hasten healing and process of healing in dormant wounds. Finally, it initiates anti-inflammatory activity that rapidly reduces pain, oedema and exudates production. In this review, an overview of the current knowledge on the healing properties of honey has been illustrated and the mechanisms of action and therapeutic properties of honey in wound healing have been discussed in detail.

Upper GI ulcer is a basic term for ulcers on the lower oesophagus, stomach, duodenum. The specific term for ulcer in the stomach is gastric ulcer. The wide use of honey around the globe helps researchers to study the usefulness of honey. Many studies had already been conducted and proved the effectiveness of honey in treating upper GI tract ulcers.

Honey is well documented from early ages to be used as cure for both internal and external body wounds, with dual i.e. systemic as well as local action over wound healing.

Upper gastrointestinal tract perforations are one of the most common causes for admissions in emergency under surgery department MYH HOSPITAL, INDORE, as it is the tertiary care referral centre for the whole district and surrounding Districts & is a leading indication for emergency laparotomy. It results either due to trauma or pathological abnormality which is discussed further. Peptic ulcer perforation is one of the most common cause leading to perforation peritonitis and is associated with significant morbidity and mortality.

Peptic ulcers are defects within the stomach or small intestine tissue layer that stretch through the muscularis mucosa tissue layer.

Lord Moynihan has stated that "perforation of duodenal or gastric ulcer is one of the most serious and most overwhelming catastrophes that can befall a human being. Every year peptic ulcer disease (PUD) affects 4 million people around the world'. Complications are encountered in 10%-20% of these patients and 2%-14% of the ulcers perforate.

Perforated biological process ulcer (PPU) is comparatively rare, but life-threatening with the mortality varying from 10% to 40%.

Perforated gastroduodenal ulcer or perforated peptic ulcer (PPU) is associated with short-term mortality and morbidity in up to 30 and 500 of patients, respectively. The incidence of perforated peptic ulcer is approximately 7 to 10 Cases per 100000 population per year. It is estimated that, after the diagnosis of duodenal ulcer, 0.3% of patients perforate annually in the first 10 years.

The knowledge of perforation dates back to over 2000 years remote past when "Sushruta", the great Indian surgeon described it as

Parinamashula" giving the relation of the food, pain and reflex. The history of knowledge of peptic ulcer perforation was reviewed by Jordan in 1985. Rawlinson is credited with the first published report in 1727, of a perforated ulcer, which happened to be gastric. The first published report of perforated duodenal ulcer was by Hamberger in 1746.

Causes for perforation are many and knowledge about the occurrence of different aetiology of peptic perforation is important as preventive measures can be undertaken before and after catastrophe. Peptic ulcer perforation is associated with high morbidity and mortality. So proper and systematic management is necessary. In spite of modern management, it is still a life threatening catastrophe. The sudden release of gastric or duodenal contents into the peritoneal cavity through a perforation leads to a devastating sequence of events that if not properly managed, is likely to cause death.

Prompt recognition of the condition is very important and only by early diagnosis and treatment it is possible to reduce the still relatively high mortality.

The percentage of patients with perforation has not declined, probably due to increased inadvertent use of NSAIDS, corticosteroids and because of irregular use of H2 antagonist, PPIs drugs, H. pylori infection, complicated enteric fever, prolong excess alcohol intake.

Current reports advocate Omental patch closure open or laparoscopically with postoperative anti H. pylori therapy. Early surgery, either by laparoscopic or open repair, and proper post-operative management are way to good outcome.

If the condition is not managed properly it progresses in a definite manner with a typical course and may lead to the death of the patient due to Bacterial peritonitis in about 7-8 days. The mortality increases with delay in operation, poor post-operative nutrition & sepsis management . The paucity in clinical progress and basic understanding of perforated peptic ulcers begs to increase attention in order to reduce morbidity and mortality. There has been a paucity of study on upper perforation peritonitis in the Indian population.

In spite of good surgical intervention and post-operative management there are many crypts and crevices which leads to patients mortality.

Post-operative management with oral honey recommence food intake and prevent dehydration secondary to low food intake. It has various complex mechanism through which it acts as a potent clinical entity to reduce the post-operative inflammation, pain, fever, early post-operative ambulation and early discharge from hospital.

Several pain management techniques are developed to be used throughout and when surgery, including treatment with steroids, analgesics, antibiotics, and anti-nausea medications, all of which have shown some positive outcomes in irregular trials while not increasing serious complications like surgical harm.

However, no ideal pain management strategy has been developed for post-operative upper GI tract perforation peritonitis cases .

Honey has wholesome worth likewise as healing properties once used in perforation peritonitis cases.

Studies has been carried out in rat model to demonstrate how honey when given orally in post-operative cases of gastric ulcer proved to be a gastro -protective adjunct.

some other studies were also carried to shown role of honey in intestinal anastomosis wound healing in rat models.

Nowadays Honey is one amongst a remedies getting used in widespread cultures as medication and food. It has been used successfully in the treatment of burns, graft donor sites, necrotizing fasciitis, postoperative wound infections and ulcers.

Additionally, it has been reported to be particularly effective as a wound treatment for children receiving chemotherapy, in which the physiological process of wound healing is impaired and prolonged (10,11).

Clinical and experimental studies have documented that honey prevents infection around wounds, decreases inflammation, and expedites tissue healing and epithelization(12) .

In recent years, honey has been progressively employed in fashionable medication as a potent wound healing agent thanks to its anti-bacterial and anti-inflammatory effects.

Through this study we will like to fill up gaps with a natural oral remedy (honey) as a postsurgical adjunct ,and try to study its effect in post-surgical outcome in laparotomy patient being operated for upper GI tract perforation peritonitis.

II. Objective

TO CONDUCT A PROSPECTIVE COMPARATIVE STUDY AND ASSES THE ROLE OF ORALHONEY IN REDUCING POST-OPERATIVE INFLAMATION, PAIN, AND ENHANCED HEALING.

III. Material &Method

STUDY SITE

MGM MEDICAL COLLEGE AND MYH HOSPITAL ,INDORE.

STUDY TYPE

PROSPECTIVE CASE CONTROL STUDY

DURATION OF STUDY

1 YEAR

METHODOLOGY

STUDY POPULATION

A TOTAL 123 PATIENTS WERE INCLUDED IN STUDY WITH DIAGNOSIS OF PERFORATION PERITONITIS ADMITTED IN EMERGENCY WARD.

CASE SELECTION

INCLUSION

1. AGE 16 -70
2. BOTH MALE AND FEMALE
3. PATIENT UNDERGOING EXPLORATORY LAPAROTOMY FOR PERFORATION PERITONITIS.
4. INTRAOPERATIVE (GASTRIC, DUODENAL).
5. PATIENT WHO GIVE WRITTEN INFORMED CONSENT.

EXCLUSION

1. AGE <16 AND >70 YEARS.
2. DIABETIC PATIENT
3. PATIENT NOT GIVING CONSENT
4. PATIENT PRESENTING WITH FEATURES OF UPPER GI TRACT PERFORATION WHO WERE MANAGED CONSERVATIVELY.
5. PATIENT HAVING HISTORY OF ALLERGY WITH HONEY.

Comparison of groups and post-operative day wise mean of pain score assessed on visual analogue scale (VAS PAIN SCORE).

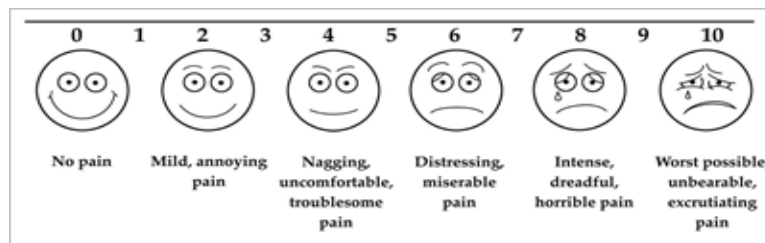


TABLE 5.

POST-OPERATIVE DAY	Group Statistics	N	Mean	Std. Deviation	T Test	P Value	Result
DAY 1	A (WITHOUT HONEY)	61	6.07	0.359112	0.595	0.234	Non-significant
	B(WITH HONEY)	62	6.03	0.254000			
DAY 6	A (WITHOUT HONEY)	61	4.36	0.775302	1.978	0.000	Significant
	B(WITH HONEY)	62	4.13	0.495351			
DAY 10	A (WITHOUT HONEY)	61	4.10	0.436078	1.776	0.000	Significant
	B(WITH HONEY)	62	4.00	0.000000			
DAY 14	A (WITHOUT HONEY)	61	2.23	0.824489	1.455	0.001	Significant
	B(WITH HONEY)	62	2.05	0.525651			

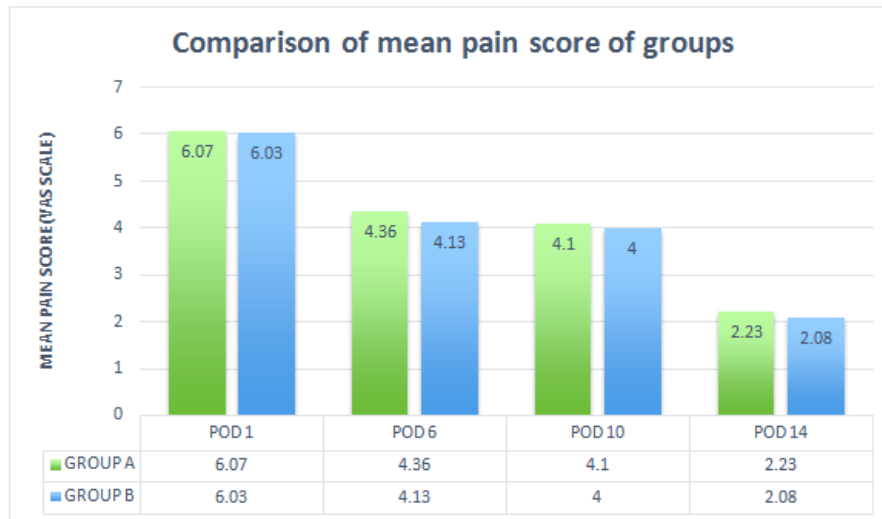
The above table shows comparison of groups and post-operative day wise mean of pain score assessed on visual analogue scale (vas pain score).

The difference in the mean pain scores of different post-operative day between two Group, data was found to be statistically non-significant ($P>0.05$) on POD 1.

Whereas on POD 6 POD 10 POD 14 Group, data was found to be statistically significant ($P<0.05$).

It implies that two groups don't differ significantly on basis of mean pain score on post-operative day 1.(P>0.05).

While on post-operative day 6,10,14 mean pain score of GROUP A was higher compared to GROUP B, and on analysis both the groups differ significantly. (P<0.05).



ASSOCIATION BETWEEN DIFFERENT GROUPS AND POST-OPERATIVE AMBULATION DAY

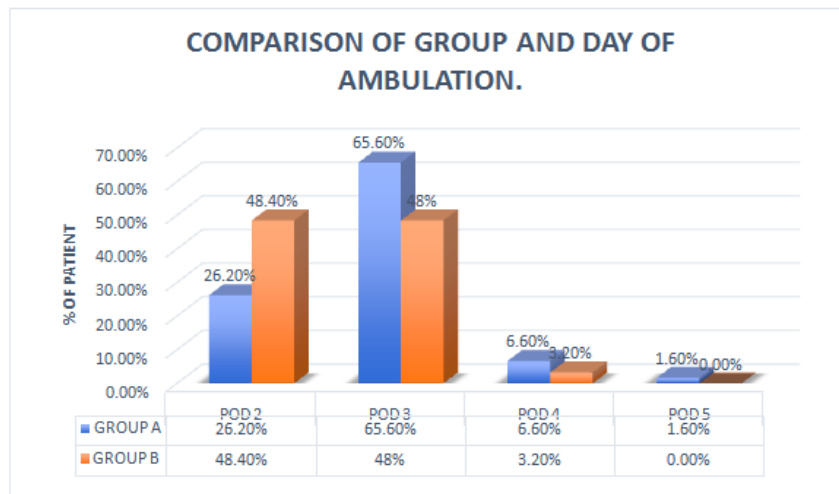
Table 8.

GROUP		AMBULATION POD				Total
		POD 2	POD 3	POD 4	POD 5	
A (WITHOUT HONEY)	Count	16	40	4	1	61
	% within GROUP	26.2%	65.6%	6.6%	1.6%	100.0%
B(WITH HONEY)	Count	30	30	2	0	62
	% within GROUP	48.4%	48.4%	3.2%	0.0%	100.0%
Total	Count	46	70	6	1	123
	% within GROUP	37.4%	56.9%	4.9%	0.8%	100.0%

Chi Square Test =7.348, df = 3, P Value = 0.046 Significant.

The above table shows the comparison of post-operative day of ambulation between different Group. Patients falling under A (WITHOUT HONEY) group show lower number of patients were ambulatory on early post-operative days.(day 2,day3) compared to patients falling under B(WITH HONEY) group.(P<0.05)

GRAPH 8.



COMPARISON OF TWO GROUPS ON MEAN VALUES OF SERUM PROCALCITONIN(ng/ml)ON DIFFERENT POST-OPERATIVE DAYS.

POD 1ST

TABLE 12.1

Parameter	Group Statistics	N	Mean	Std. Deviation	T Test	P Value	Result
SERUM PROCALCITONIN(ng/ml)	GROUP A (WITHOUT HONEY)	61	12.749	1.8062	-0.101	0.982	Non-Significant
	GROUP B (WITH HONEY)	62	12.782	1.8291			

POD 6TH

TABLE 12.2

Parameter	Group Statistics	N	Mean	Std. Deviation	T Test	P Value	Result
SERUM PROCALCITONIN(ng/ml)	GROUP A (WITHOUT HONEY)	61	0.6062	1.87239	2.419	0.000021	Significant
	GROUP B (WITH HONEY)	62	0.3011	0.01757			

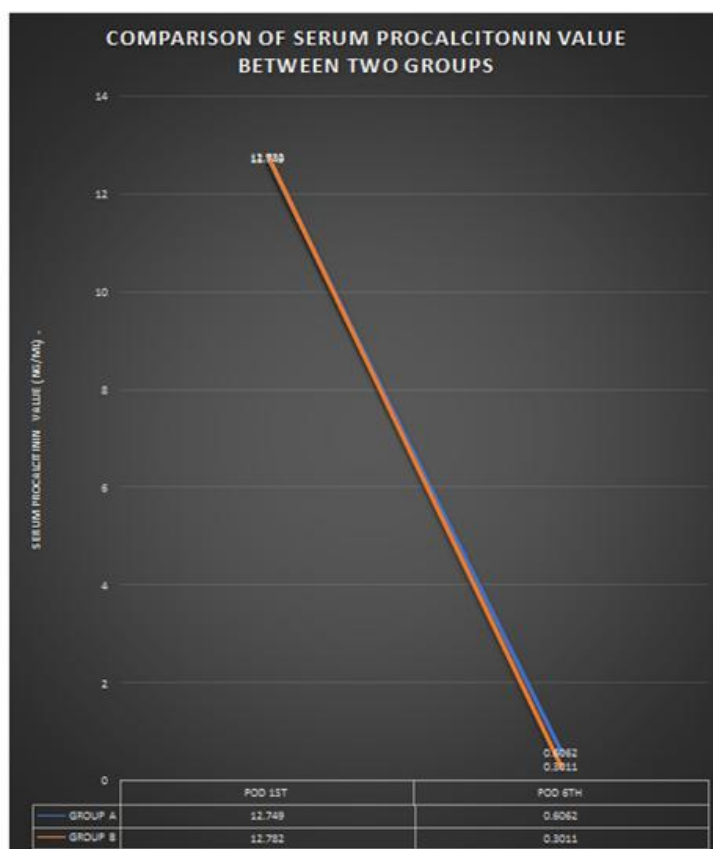
On analysing above table data, it shows that on post-operative day 1 when two groups were compared on the basis of mean value of serum procalcitonin ,no significant difference found between GROUP A (WITHOUT HONEY) & GROUP B (WITH HONEY) .

(p>0.05)

But on post-operative day 6th both the groups shows a decreased serum procalcitonin level compared to post-operative day 1, but when the mean values of two groups were compared a significant difference between two groups were found. Which shows significantly there was more decrease in serum procalcitonin level of GROUP B (WITHOUT HONEY) in comparison of GROUP A (WITHOUT HONEY).

(p<0.05)

GRAPH



IV. Results

SIGNIFICANT EFFECTS IN POSTOPERATIVE PAIN REDUCTION(VAS SCALE),INFLAMMATION (PROCALCITONIN),EARLY AMBULATION AND DISCHARGE.

V. Conclusion & Discussion

HONEY AT A DOSE 2 TSP (10ML)/6HRLY STARTING FROM 48-HOUR POST OPERATIVELY TILL DAY 14TH POST-OPERATIVELY IN UPPER GASTRO-INTESTINAL TRACT PERFORATION PERITONITIS CASES IS FRUITFUL FOR A BETTER SURGICAL OUTCOME AND EARLY PATIENTS' RECOVERY FROM SURGICAL COMPLICATION SUCH AS POST-OPERATIVE PAIN, FEVER, ILEUS, DELAYED AMBULATION, WOUND INFECTION ETC.

HOPEFULLY, NO ADVERSE REACTION WAS NOTED; SUCH AS BLEEDING, READMISSION IN HOSPITAL, HONEY INTOLERANCE, ETC. HONEY MAY HAVE A LARGE DOMAIN OF CLINICAL BENEFITS WHICH NEEDED TO BE STUDIED AND SUPPORTED BY VALUABLE DATA SO THAT WE CAN START TAKING BENEFITS FROM CONVENTIONAL ADJUNCT.

WE ADVISE ALL OF OUR PATIENTS TO USE ORAL HONEY AFTER LAPAROTOMY IN PERFORATION PERITONITIS CASES AS WE HAVE GOT GOOD AND ACCEPTABLE RESULTS FROM CURRENT STUDY.

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