

**HONEY: CLINICAL
APPLICATIONS AND SCOPE AS
AN ALTERNATE ANTIBACTERIAL
THERAPY IN MULTI- RESISTANT
OCULAR BACTERIAL
INFECTIONS ESPECIALLY
INVOLVING MRSA**

PROF. (DR.)SHAMIM AHMAD

PROFESSOR OF MICROBIOLOGY

“DAAD” Fellow (W. Germany)
“JSPS” Fellow (Japan)
“INSA-Royal Soc.” Fellow (UK)
“DAAD” Fellow (Germany)
“TUBA” Fellow(Turkey
“SAIA”Fellow(Slovak Republic

OFFICER INCHARGE

Microbiology Section

TEACHER INCHARGE(ADMINISTRATION)

Institute of Ophthalmology,
J N Medical College ,
Faculty of Medicine,
Aligarh Muslim University,
Aligarh-202002,INDIA

shamimaligarh@yahoo.co.in

Working SINCE JANUARY,10,1983





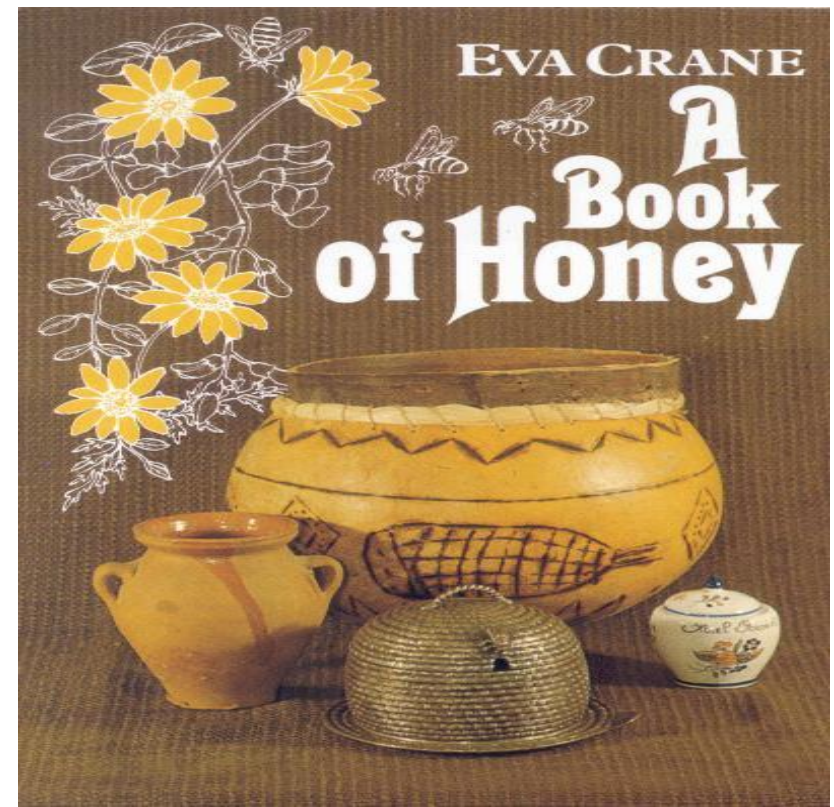
Honey in the Other Holy and Pious Books

* Holy Quran Pak –

* “The Veda”

* Both the old and
new *testaments of*

“the Bible”



HOLY BOOK QURAAN VERSUS

“HONEY-Great healer of diseases”

• ثُمَّ (٦٨) وَأَوْحَىٰ رَبُّكَ إِلَى النَّحْلِ أَنْ اتَّخِذِي مِنَ الْجِبَالِ بُيُوتًا وَمِنَ الشَّجَرِ وَمِمَّا يَعْرِشُونَ كُلِّي مِنَ كُلِّ الثَّمَرَاتِ فَاسْلُكِي سُبُلَ رَبِّكِ ذُلُلًا يَخْرُجُ مِنْ بُطُونِهَا شَرَابٌ مُخْتَلِفٌ أَلْوَانُهُ فِيهِ شِفَاءٌ لِلنَّاسِ إِنَّ فِي ذَلِكَ لَآيَةً لِّقَوْمٍ يَتَفَكَّرُونَ (٦٩)

• “And your Lord inspired the bee, saying: ‘Take you habitations in the mountains and in the trees and in what they erect. Then, eat of all fruits, and follow the ways of your Lord made easy (for you).’ There comes forth from their bellies, a drink of varying color wherein is “healing for men”. Verily, in this is indeed a sign for people who

think.” [Quran; 16: 68-69]



The anti-bacterial, anti-inflammatory, anti-oxidant and wound healing properties of Honey

- Low pH ,High Osmolarity , H₂ O₂ Production → Anti-inflammatory & Anti-Oxidant Activities
- Wound Healing Activity
- Anti-bacterial Activity → Phenolic acids
Flavonoids Reduced Prostaglandins Production

ULCERS_ treated successfully with honey

- Foot ulcers in lepers



Mirackeles of HONEY ? → MAGIC !



Healing

Oedema

A**N**tiseptic

Cur**E**

Dentistr**Y**



Honey in common infections

- Anthrax
- Diphtheria
- Diarrhea,
- Pneumonia
- Meningitis
- Tuberculosis
- Septicemia,
- Typhoid
- Septicemia,
- wound infections
- Dysentery
- Cholera



Treatment by Honey: many Diseases,Wounds & Ulcers-Many Publications

- Wound infections,
- burns,
- psoriasis,
- gastrointestinal disorders,
- arthritis,
- eczema,
- sore throat,
- dental carries,
- stomach aches ,
- flu like symptoms and
- corneal ulcers

Bacterial species sensitive to Honey

- *Pseudomonas aeruginosa*
- *salmonella typhi*
- *Shigella species*
- *Staphylococcus aureus*
- *Streptococcus faecalis*
- *streptococcus pneumoniae*
- *Streptococcus pyogenes*
- *Vibrio cholerae*

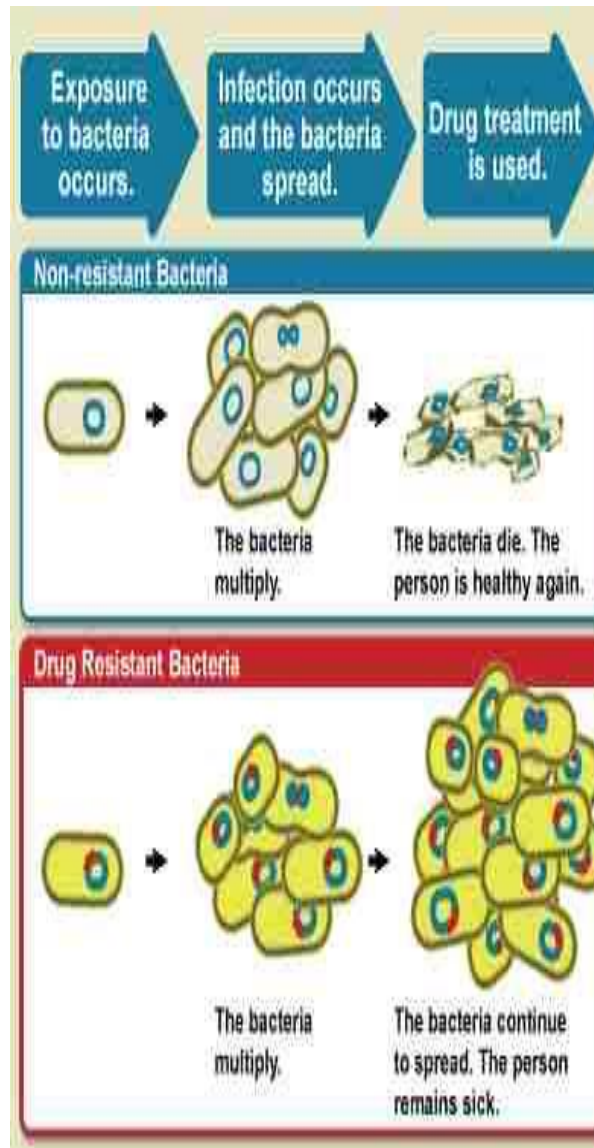


Honey's Clinical Applications/Miracles in Various fields Observed

- Ophthalmology,
- Dentistry,
- Surgery,
- Plastic Surgery ,
- Paediatrics ,
- Gynaecology ,
- Dermatology
- Gastroenterology .

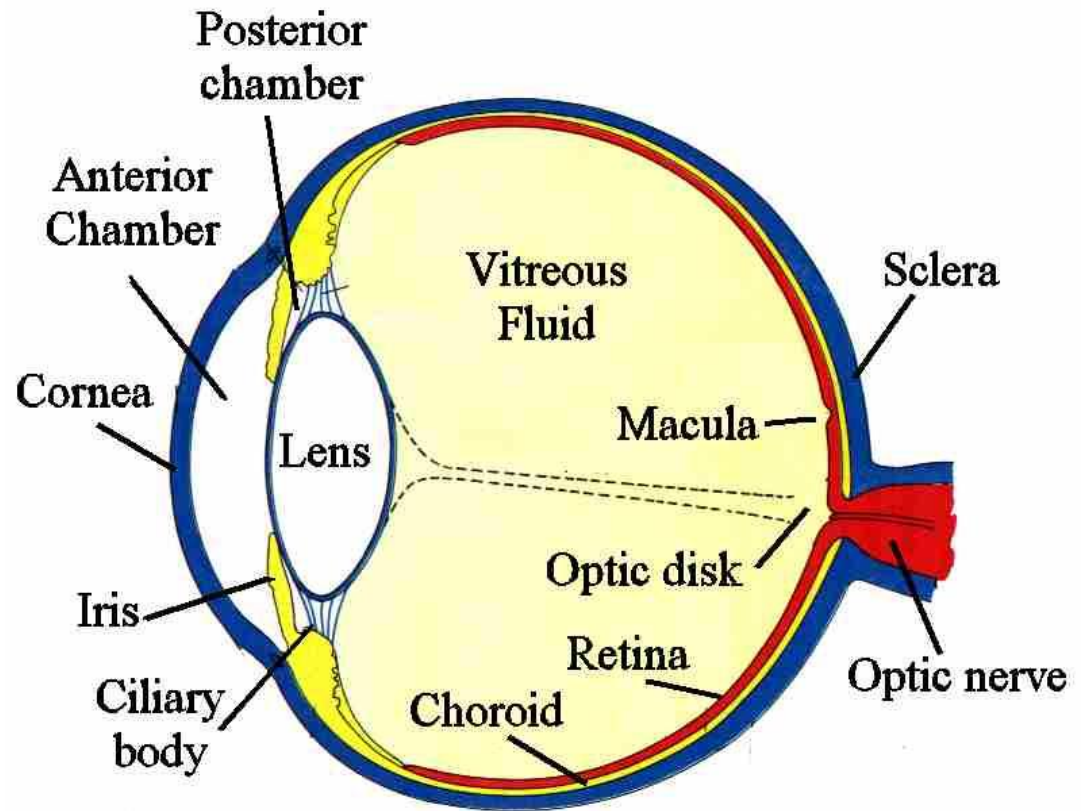
Drug resistance in Eye Inf. **Emerging** ?

Drug resistance now a global problem to physicians and surgeons.



Bacteria cause various pathologies in the eye as -

Conjunctivitis
Keratitis
Keratoconjunctivitis
Blepharitis
Hordeolum
Scleritis
Chalazion
Dacryocystitis
Uveitis,
Orbital cellulitis
Bacterial corneal ulcers,
Endophthalmitis
Panophthalmitis etc



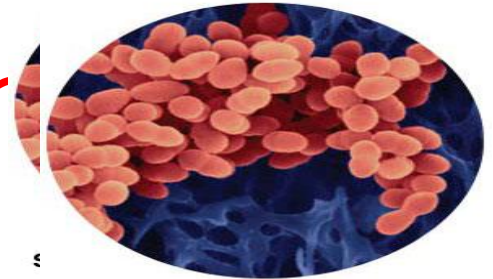
Kimber, D.C.; C.E. Gray, and C.E. Stackpole. (1966).
Anatomy and Physiology. MacMillan Co., NY. pg.335.

EMERGENCE OF DRUG RESISTANCE AMONG EYE INFECTANTS (MRSA)

- A large number of eye infections may pose a potential **eye blinding threat** particularly when not respond to common antibiotics due to **emergence of resistance.**



What is MRSA?



Staphylococcus aureus (MRSA)

© Dennis Kunkel Microscopy, Inc.

Methicillin-resistant
staphylococcus aureus

- *S aureus* that is resistant to the synthetic penicillins (methicillin, oxacillin, nafcillin, cloxacillin, dicloxacillin and amoxicillin [+] clavulanate and the cephalosporins) is known as **MRSA**.
- Methicillin — the first semi-synthetic penicillin — rapidly became the "gold standard" for treating penicillin-resistant *S. aureus* in 1960.

OUR RECENT STUDY FINISHED

Antibacterial Efficacy of Topical
Honey in Dry Eye Patients: ***A
clinico- Microbiological
study ”***

COMPARATIVE EFFECT OF TOPICAL USE OF MANUKA HONEY (40%) ON CONJUCTIVAL BACTERIAL LOAD AT VARIOUS PERIOD OF TIME



THESES Guidance from Lab.of Prof.Shamim Ahmad-since 1989- **MANY**

- ▶ 1. ***"Evaluation of honey in the treatment of external bacterial infections of eye: an animal model"***, M.S. (Ophthalmology) thesis by Dr. Ata-Ullah Khan, 1991.
- ▶ 2. ***Topical use of Honey in Dry Eye: A clinico- Microbiological study"***, MS (Ophthalmology) thesis by Dr.Mohd.Arshad,2010.



THESES Guidance from Lab.of Prof.Shamim Ahmad-since 1989

- 3."Antibacterial activity of honey: A qualitative analysis", 1990.
- 4."Antibacterial activity of honey: a study on mixed bacterial population of natural habitats, 1991.
- 5."Herbal Aqueous Extracts of Garlic (*Allium sativum*). Tulsi (*Ocimum sanctum*) and Ajowan (*Ptychosis ajowan*) antibacterial activities: A comparison with Honey", 1993.

COCLUSION

Based on available information & our work, we can see potential prospects and scope of Honey as an alternate antibacterial option in future particularly for the treatment of non-responding life threatening multi-resistant pathogens especially superbug MRSA strains & probably conjunctivitis, keratitis, blephritis, orbital cellulitis, and dacryosystitis.