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An insight into homoeo-pathogenesis and management of microcytic hypochromic anaemia in *apis mellifica*: A scientific review of lesser known aspect of *apis mellifica*

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Abstract
Apis mellifica is a polychrest medicine prepared from honey bee. Its therapeutic use from urticaria, erysipelatous inflammation, dropsical effusions to renal failure is well known but its role in treating iron deficiency anaemia has not been fully explored though it happens to be the only medicine for having action on the size of the R.B.C. Boericke's Materia Medica mentions its prominent action on cellular tissue which is further cleared by studying Homeopathic Medical Repertory by Robin Murphy where its specific action is mentioned on 'irregular and small sized R.B.C'. Thus, the diagnostic hypochromic microcytic P.B.F of iron deficiency anaemia matches with small sized R.B.C of *Apis mellifica* making it pathological similimum for iron deficiency anaemia whether dietary or secondary to inflammations.

Keywords: PBF-peripheral blood film, RBC-red blood corpuscles, who-world health organisation

Introduction
Anaemia is prevalent worldwide. As per data given by W.H.O, 24.8% of human population is currently suffering from anaemia and majority among this group is having iron deficiency anaemia [1].
Government of India has taken many steps to control its prevalence by including Anaemia in National Nutritional Anaemia Control Programmes [2]. For medical fraternity especially in India, anaemia and its effects pose a major health challenge because it has a capacity to adversely affect the renal and cardiac functions.

Introduction to iron deficiency anaemia
Iron deficiency anaemia can be primary i.e. due to deficient intake of iron in the diet or can be secondary i.e. caused after inflammations in the body called Anaemia of Chronic Disease which requires medicinal intervention as well.
Iron deficiency anaemia develops when there is reduction in circulating red cell mass as well as haemoglobin concentration below normal, thereby reducing the size and oxygen carrying capacity of the RBC's.

For the clinical purpose, it is convenient to divide anaemia into two categories
1. Dietary Iron Deficiency Anaemia
2. Anaemia of Chronic Disease.

In both these conditions, there is decreased quantity of iron inside RBC's making them hypochromic and microcytic. Diagnosis of iron deficiency anaemia is done by examining PBF and hypochromic microcytic PBF is diagnostic [3].

Introduction to *Apis mellifica* and its relation to iron

Apis mellifica is prepared from honey bee. As per a study bearing title "Iron – containing cells in the honey – bee (Apis mellifera) II. Accumulation during development" shows that honey bee stores iron granules [4]. The iron granules increase in both size and number during ageing. Thus, mother tincture extracted from honey bee also contains iron in it. Clinical application of *Apis mellifica* for its use in small size R.B.C as mentioned in Murphy Repertory indicates relation between Anaemia and *Apis mellifica* and requires further study in this direction [5].

a. Monograph of *Apis mellifica* in H.P.I: HPI vol. 1 under the monograph of *Apis mellifica* mentions the following [6].

- Family – hymenopterae
- Part used – live bees
- Preparation – live bees are placed in a glass. The glass is shaken and menstrum is poured in. it is allowed to macerate for 10 days by shaking twice. The resulting mother tincture should be poured off and filtered.
- Mother tincture of Apis – Drug strength 1/10
- Potencies- (Preparation)
  2x to contain one part of Tincture, Four parts of purified water, five parts of strong alcohol.
  3x with dilute alcohol
  4x and higher to with dispensing alcohol

b. Sphere of action of *Apis mellifica*: Apis has a marked action on cellular tissue, mucous membranes, glands, skin and serous membranes producing oedema, dropsy, ascites, urticaria and inflammations of parenchymatous tissue [7].

c. Views of stalwarts about special action of apis are given below

- Dr Richard Hughes, in his manual of Pharmacodynamic [8].

'It is an acute oedema, the cellular tissue being more affected than the skin'. Pg. no. 213

'Apis acts specifically on serous membranes and has been much used in their acute inflammations." It must also be remembered that in full doses Apis is diuretic, and in this way may remove dropsical effusions'. Pg. no 218

'Apis seems to have the same action on the synovial as it has on the serous membranes'. Pg. no. 219

- Dr. William boericke, in his Pocket Manual of Homoepathic Materia Medica with Indian medicine and repertory [9].

'Apis acts on the cellular tissue causing oedema of skin and mucous membranes'.

- Robin Murphy, in his Lotus Materia Medica [10].

'Apis produces serous inflammation with effusion. Acute inflammation of kidney and other parenchymatous tissue are characteristic pathology states corresponding to Apis'. Page no. 186

d. Doctrine of Signature

Doctrine of signature of *Apis mellifica* could be understood from the following lines of Richard Hughes, pg. no 213

"Let us consider the local effects of a bee sting. The part rapidly swells up, becomes more or less hot and red with a tense pain and often considerable burning, tingling and itching. This is the simplest and most characteristic form of the pathogenetic influence of Apis" [8].

Pathogenesis of anaemia in drug picture of *Apis mellifica*

It is evident that dietary deficiency and chronic inflammations produce anaemia by affecting the bone marrow. Drug proving experiment which is peculiar pathogenetic trial in homoeopathy in *Apis mellifica* shows development of characteristic inflammations and its consequences throughout its drug picture. The impact of inflammation in body is further cleared by the study of Pathology.

Inflammations are capable of affecting the bone marrow haematopoiesis, so that more and more innate effector cells can be produced. This leads to reduction in production of lymphoid cells and erythrocytes. Pro inflammatory cytokines released during the process of inflammation inhibit erythropoiesis which leads to development of anaemia. This is called Anaemia of Chronic Diseases/Inflammations. IL-1,TNF, Erythropoietin released in chronic inflammations blocks iron release from macrophages and hence diminished iron utilization in body [3]. Hence *Apis mellifica* by inducing inflammations in the body also affects the erythropoietic activity of the bone marrow producing irregular and small sized RBCs pathogonomic of Iron Deficiency Anaemia.

There is even similarity in the common symptoms of *Apis mellifica* with those found in Anaemia as is clear from following table.

Table 1: Similarity in clinical features of anaemia with clinical symptoms of *Apis mellifica* in homoeopathic repertory and material Medica

Symptoms of anaemia	Symptoms of anaemia in drug picture of *apis mellifica*
Weakness/ Fatigue	Limbs weak (Repertory)[p.n.1413] Extremities, tired, bruised feeling(M.M)
Dyspnoea on exertion	Respiratory, dyspnoea, breathing hurried and difficult (MM) Breathing difficult (Repertory)[p.n.266]
Tachycardia , rapid full bound pulse	Pulse is hard, small, intermittent and quick. (MM) Pulse fast, elevated, exhausted.(Repertory)[p.n.1858]
Koilonychia and Platynychia	Hands, nails, fingernails. Inflammation (Repertory)[p.n.1022]
Angular Stomatitis	Mouth, cracked, corners, mouth skin of (Repertory)[p.n.1721]
Glossitis	Tongue fiery red, swollen, sore and raw.(MM) Tongue, swelling (Repertory)[p.n.2223]
Claudication	Thrombosis (MM)
Angina Pectoris	Chest, Angina pectoris (Repertory)[p.n.289]
Fatty change	Kidneys, general oedema with Fatty degeneration, kidneys (Repertory)[p.n.1284]
Anaemia	Clinical anaemia Clinical, anaemia in Bright's disease (Repertory)[p.n.373]
Dilatation of arterioles	Inflammation, Swelled blood vessels.(Repertory)[p.n.386]

Therapeutic use of *apis mellifica* and aphorism 3 of Organon of medicine

Aphorism 3 - ' if the physician clearly perceives what is to be cured in diseases, that is to say, in every individual case

of disease (knowledge of disease, indication), if he clearly perceives what is curative in medicines, that is to say, in each individual medicine (knowledge of medicinal powers), and if he knows how to adapt, according to clearly defined principles, what is curative in medicines to what he has discovered to be undoubtedly morbid in the patient, so that the recovery must ensue – to adapt it, as well in respect to the suitability of the medicine most appropriate according to its mode of action to the case before him (choice of the remedy, the medicine indicated), as also respect to the exact mode of preparation and quantity of it required (proper dose), and the proper period for repeating the dose; - if, finally, he knows the obstacles to recovery in each case and is aware how to remove them, so that the restoration may be permanent, then he understands how to treat judiciously and rationally, and he is a true practitioner of the healing art' [11].

As per Aphorism 3, we need to perceive what is curative in *Apis mellifica* which requires differentiation between Physiological action and Dynamic action of Apis as given below -

Physiological action and dynamic action of *Apis mellifica*

Table 2: Physiological action of *Apis mellifica* [7]

Cellular tissue	Oedema, stinging burning pain
Skin	Urticarial inflammation
Serous membrane	Dropsy, effusion
Mucous membrane	Oedematous inflammation
Glands	Hypertrophy
Parenchymatous tissue	Inflammation

Table 3: Dynamic action of *Apis mellifica* [9]

Mind-	Awkward, drops things readily, apathy, indifference, wheaning, tearful
Head	Tired, dull, heavy sensation, heat, throbbing, and pressing pain.
Eyes	Swollen, oedematous, lachrymation, serous exudation, sharp pain.
Nose	Swollen, red inflamed
Face	Swollen, red piercing pain, erysipelas with stinging.
Mouth	Glossitis, red, shiny, puffy.
Throat	Uvula swollen, sac like puffy, fiery red tonsils.
Stomach	Thirstless, craving for milk.
Abdomen	Extremely tender, dropsy.
Stool	Raw and sore anus
Urinary	Burning and soreness when micturating, scanty and high colored.
Female	Oedema of labia, tenderness of uterine region.
Respiratory	Dyspnoea, feels as if he could not draw another breath, pleurisy.
Extremities	Oedematous, synovitis, cellulitis, erysipelas
Sleep	Drowsy, sudden startles during sleep
Fever	Afternoon chill with thirst, worse on motion and heat.
Skin	Swelling, sore, sensitive, stinging pain.puffing up of whole body.
Modalities	Worse heat, touch, pressure, after sleeping Better by uncovering, cold bathing and open air

What is curative in *Apis mellifica*

By studying the drug picture of *Apis mellifica*, it is clear that it is highly curative for inflammatory conditions whether acute or chronic that present with marked cellular oedema and swellings. Oedematous conditions are caused by inflammations as well as by severe Anaemia. There is retention of salt and water, reduction of renal blood flow and glomerular filteration rate also. And when the curative action of *Apis mellifica* begins, then it starts its curative action as diuretic i.e. by increasing the urinary flow and reducing dropsical effusions, a fact endorse by Dr. Boreicke saying, "Sometimes action is slow; several days elapse before it is seen to act, and then urine is increased" [9].

As the urinary flow increases, inflammation decreases and there is decrease in secretion of cytokines related to inflammation ensuring the availability of iron to cells. The curative action of Apis depends upon its selection on the Homoeopathic Principle of Similia Similibus Curantur. When the *Apis mellifica* is selected on the Principles of Homoeopathy, it always cures.

Homoeopathic treatment

Homoeopathic treatment for cases requiring *Apis mellifica* is based on selecting the peculiar, uncommon, characteristic symptom of *Apis mellifica* obtained from its dynamic effect on healthy individual.

Dietary recommendations in iron deficiency anaemic

It is recommended that regular intake of honey should be done by an individual because honey is nutritive and also possess therapeutic value. Honey has anti-inflammatory, anti-oxidant and antibacterial properties. It is highly valued as an alternative medicine too.

Saudi journal of biological sciences had published as article on "role of honey in modern medicine" saying that honey has a direct action on human red blood cells. 'Alvarez Suarez et al. (2012) determined the role of Phenolics from monofloral honeys on human red blood cells membranes against oxidative damage and The results shows that the honey constrains RBCs oxidative damage most probably due to its assimilation into cell membrane and capability to enter and reach at the cytosol [12].' Traditional use of honey in India is also supported. According to Asian text 'Honey is a traditional cure as well as prevention for anaemia as it helps in maintaining the optimum level of RBCs and haemoglobin' [13].

Conclusion

It is clear that *Apis mellifica* has a pathogenetic capacity to influence the size of RBC and storage of iron in it. Drug picture of *Apis mellifica* contains all those symptoms which are common to anaemia as well as to inflammations. Apis has inherent capacity to alter heart and renal functions and it is proposed through this article that it is capable of having curative action on iron deficiency anaemia also. It is suggested to explore its use further in control of iron

deficiency anaemia by its clinical trials.

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