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# HomeoBuzz

CONTINUING MEDICAL INFORMATION

Vol. 15, No. 08, November 2020, Total No. of Pages 16

Dear Readers,

Humans are amazing and the fittest ones to survive all odds of the tangible world. Moving on with indomitable courage is aptly expressed by a powerful punch line of a popular T.V. show airing on nowadays: "Setback ka jawab Comeback se Do". The unfailing spirit to give smashing replies against the worst debacles makes humans special. We traversed through one of the most difficult phases of our times with constant efforts to stay connected and motivated. It was difficult and for a few it was indeed a nightmare. Lives and livelihoods both were lost and mind struggled with grief struck hearts and body to move ahead and stand up once again.

With tiny steps, life is returning back to track but with all safety and mandatory precautions... showing that firm conviction and desire to evolve can make anything possible. The metro is back on track, cinemas rolled on and the IPL 2020 is live, thus showing that the gloom shall definitely be conquered with belief and zeal!

With the same zeal B.Jain is all set to roll out Omeo Calendula Hand Wash and Omeo Calendula Body Wash as new additions in the personal care products range. The hand wash has herbal extracts of Calendula infusing antimicrobial, soothing and healing properties in the product. The hand wash also has Aloe barbadensis leaf extract which keeps the skin soft and moisturized even after using the product multiple times, making it perfect for maintaining hand hygiene all through the day.

Someone rightly said – "Difficult Roads Often Lead to Beautiful Destinations." And thus we are moving ahead towards a better and brighter future.

**Kuldeep Jain**  
Chief Editor

Dear Doctors,

Corona is the biggest episode of recent times that reminded us the value of human touch, relations and society as well as the magnanimity of fear. Fear is important but our psychological mechanism can counter fear only up to a certain limit, beyond which it starts impacting the neurological axis and upsets the organ functions. If it's reigns are not pulled at this stage too, fear can affect organic changes. This theory is taken from a chat show on increasing incidents of depression affecting the society during these tough times.

With festivities ringing round the corner, waves of joy, hope and dreams of brighter future are churning up once again and are sweeping out webs of fear that stood hanging over our logical minds all through these months. With belief in ourselves and our abilities, positivity shines and negativity fades down clearing the way to a better tomorrow.

This Diwali we pray that you prosper with rebounded energy and positivity in all your endeavours and achieve a new high in your ventures. With this gesture we present to you our new product, Omeo Calendula Hand wash, crafted with natural ingredients Calendula and Aloe vera that will help you keep yourselves clean and confident while stepping out of your homes as well as after returning back home.

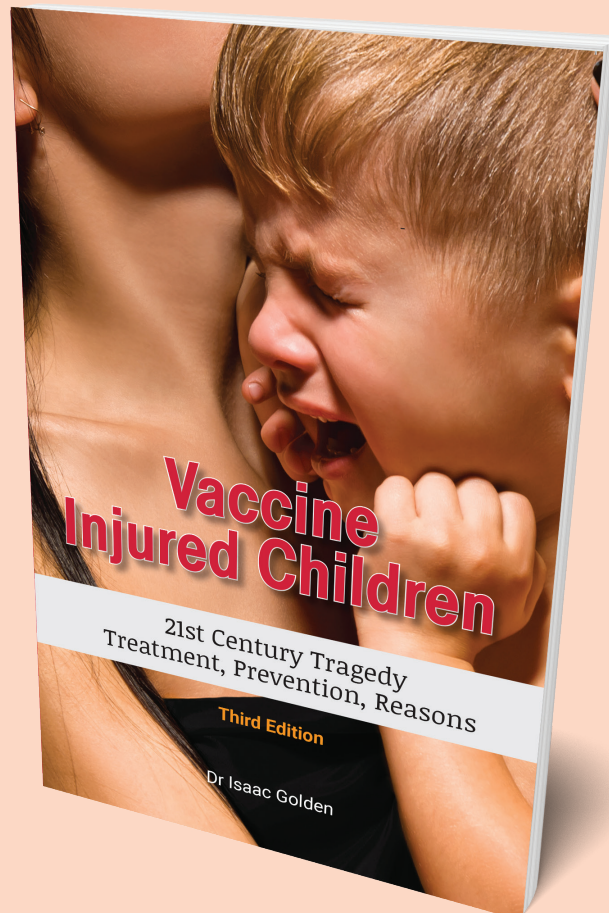
Diwali is a season of feasting and pampering of taste buds but these indulgences lead to indigestion and dyspepsia that can potentially spoil the fervor. But if Omeo Digestion syrup is there on your rack, you don't have to worry at all.

We bring this edition of Homeobuzz, with best wishes for a safe and joyous Diwali to you and your family!

**Dr. Vasundhara**  
Editor

# Vaccine injured children

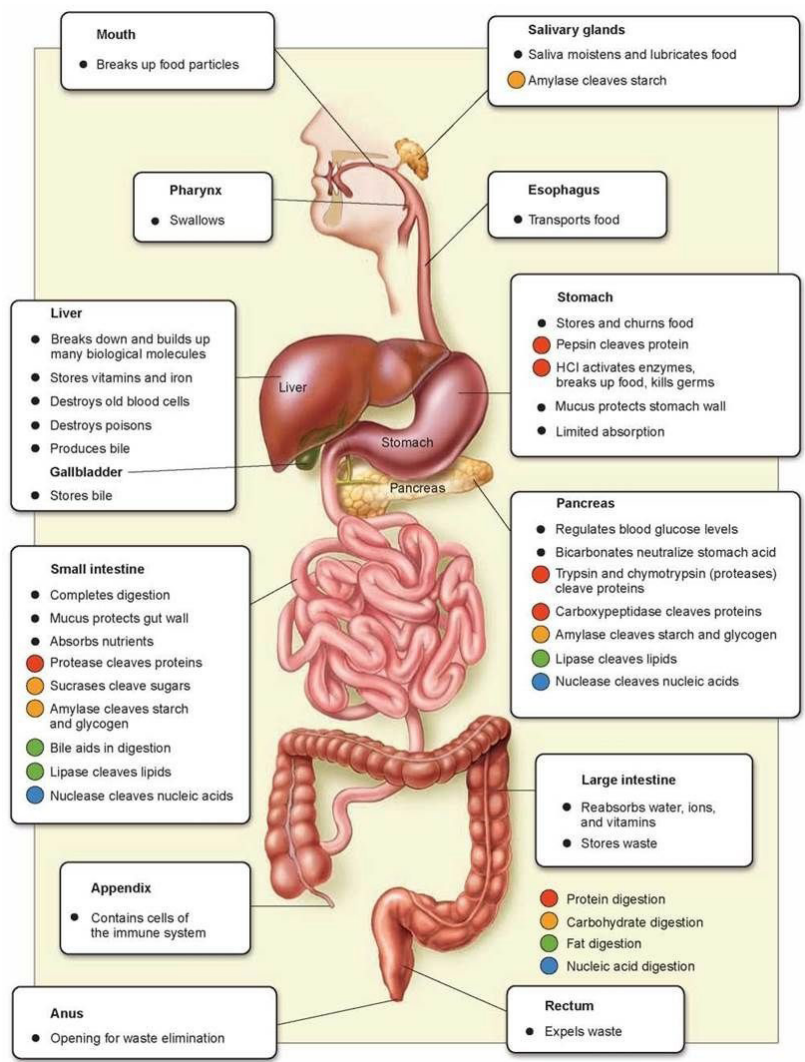
## Dr Isaac Golden



- A valuable resource and an authentic evidence for practitioners of any modality to recognise and treat vaccine injury.
- A guide for the parents or would-be parents about the painful effects of different vaccines on children.
- This book is not against vaccination but only an attempt to make people aware about all the immunisation options available, their safety and effectiveness, so as to guide a parent to take the right decision for the child.
- A factual book possessing answers to all queries related to vaccination or vaccines, their symptoms, treatment options or preventive methods available.
- Discussion is being done on the intricacies of vaccines and their effects on the child's health.
- Available treatment options for such effects are being mentioned.
- Preventive measures that can be opted to prevent the child from harmful effects of vaccination are also stated.
- Case records with the latest figures and data analysis are being presented to illustrate the practical aspects of the management of vaccine injury.

## A REVIEW OF GASTROENTERITIS

The mouth, the esophagus, the stomach, the small intestine (or "small bowel") and the large intestine (also called "large bowel" or "colon") together form a 30 ft long digestive tract in humans and along with secretions from the liver, pancreas, and gallbladder they help in the process of digestion of food through ingestion, secretion, propulsion, absorption, and defecation.



### Disorders of alimentary tract

Digestion helps in nourishing the body tissues by absorption of nutrients from the gut and elimination of toxic material from the body. In untreated/maltreated diseases of the digestive tract, long term effects can be seen upon all other systems of the body. The digestive disorders can arise from infections, infestations, infiltrations, degenerations, mechanical anomalies and auto immune disorders. The usual complaints associated with digestive disorders are:

- Oral aphthae, ulceration with pain and fever
- Dysphagia i.e. difficulty in swallowing
- Heartburn i.e. burning sensation in chest
- Nausea and vomiting

- Hematemesis i.e. vomiting of blood
- Flatulence and belching with abdominal distention.
- Pain in abdomen with associated bowel irritability
- Constipation with abdominal cramps
- Diarrhoea and tenesmus
- Lienteria
- Sudden and severe episodes of any of the above symptoms
- Weight loss/ weight gain

Oral aphthae, ulceration and depositions on tongue and oral mucosa may arise from **oral thrush**, deficiencies of vitamin C & B12, **herpetic stomatitis**, **hand foot and mouth disease** etc.

**Esophagitis, esophageal strictures and spasms, Achalasia cardia and esophageal cancer** cause difficulty in deglutition, globus pharyngius with associated pain in certain conditions.

**Gastro-esophageal reflux disease** is a common symptom of digestive disorders that affect the lower esophageal sphincter which gets weakened allowing the reflux of gastric contents into the esophagus and results in chest discomfort, heartburn or pyrosis.

**Peptic Ulcer Disease (PUD)** is another form of digestive disorder which results in a breach in mucosal lining of stomach, lower esophagus or duodenum. Degeneration of gastric mucosa results in **gastric & duodenal ulcers**. **Gastric ulcers** cause pain in abdomen after meals and **Duodenal ulcers** cause upper abdominal pain usually when the stomach is empty. *Helicobacter pylori* is a bacteria known to cause gastric ulcers. Misuse of Non steroidal anti inflammatory drugs can also cause PUD.

**Gastric carcinoma** is the fifth leading type of cancer and third leading cause of death from cancer.<sup>2</sup> *Helicobacter Pylori* is responsible for 60% of cases of gastric cancer, while smoking, dietary factors and genetic factors contribute for the remaining incidents. Stomach cancer has an insidious onset and is usually asymptomatic to begin with or may begin with minimal non-specific symptoms in early stages. Till a symptomatic picture of the disease becomes clear, the cancer has already advanced to metastatic stage, which explains its poor prognosis. Symptoms if at all present are of indigestion with heartburn, abdominal distention and loss of appetite.<sup>1</sup>

Other affections of alimentary canal are **Gastroenteritis, Crohn's disease, ulcerative colitis, celiac sprue, diverticulitis, Intestinal volvulus, amoebiasis, giardiasis, haemorrhoids and fissures, abdominal hernias and colon cancer**.

## GASTRO ENTERITIS AND ITS HOMOEOPATHIC MANAGEMENT

Inflammation of gastrointestinal tract due to various causes leads to diarrhoea, vomiting and nausea and is termed as gastroenteritis. The predominant symptom of gastroenteritis is acute diarrhoea and is also known as Stomach flu in non specific terms. Acute diarrhoea is often seen as a symptom of other infectious and non-infectious diseases as well as in psychological or physical stress.

According to a World Health Organisation (WHO) report, diarrhoeal diseases is one of the top 10 causes of deaths occurring worldwide, causing 1.6 million deaths in 2016 and is the second largest cause of deaths occurring in low-income countries.<sup>2</sup> In developed countries, diarrhoea is a significant problem, majorly affecting the vulnerable older population.

### BACTERIAL GASTROENTERITIS

Food-borne gastroenteritis majorly spreads by the faecal–oral route through fomites, contaminated

hands, or contaminated food or water. The provision of clean drinking water, appropriate disposal of human and animal sewage, and the application of simple principles of food hygiene can limit the spread of food-borne gastroenteritis. Some organisms (**Bacillus cereus**, **Staph. aureus** and **Vibrio cholerae**) elute exotoxins that cause vomiting and/or so-called 'secretory' diarrhoea (watery diarrhoea without blood or faecal leucocytes, reflecting small bowel dysfunction). The time from ingestion to the onset of symptoms is short and, other than dehydration, little systemic upset occurs. Other organisms, such as **Shigella spp.**, **Campylobacter spp.** and **enterohaemorrhagic Escherichia coli (EHEC)**, may directly invade the mucosa of the small bowel or produce cytotoxins that cause mucosal ulceration, typically affecting the terminal small bowel and colon. The incubation period is longer and more systemic upset occurs, with prolonged bloody diarrhoea. *Salmonella* spp. are capable of invading enterocytes and of causing both a secretory response and invasive disease with systemic features. This is seen with *Salmonella* Typhi and *Salmonella* Paratyphi (enteric fever), but may occasionally be seen with other non-typhoidal *Salmonella* spp., particularly in the immunocompromised host and the elderly.<sup>3</sup>

### VIRAL GASTROENTERITIS

**Norovirus** is the most common cause of infectious gastroenteritis. Food handlers may transmit this virus, which is relatively resistant to decontamination procedures. The incubation period is 24–48 hours. High attack rates and prominent vomiting are characteristic. Diagnosis may be achieved by electron microscopy, antigen or DNA detection (PCR) in stool samples, although the characteristic clinical and epidemiological features mean that microbiological confirmation is not always necessary. The virus is highly infectious and cases should be isolated and environmental surfaces cleaned with detergents and disinfected with bleach.<sup>3</sup>

**Astroviruses** cause diarrhoea in small children and occasionally in immunocompromised adults.

**Rotaviruses** infect enterocytes and are a major cause of diarrhoeal illness in young children worldwide. There are winter epidemics in developed countries, particularly in nurseries. Adults in close contact with cases may develop disease. The incubation period is 48 hours and patients present with watery diarrhoea, vomiting, fever and abdominal pain. Dehydration is prominent. Diagnosis is aided by commercially available enzyme immunoassay kits, which require fresh or refrigerated stool samples. Immunity develops to natural infection. Monovalent and multivalent vaccines have been licensed in many countries and have now demonstrated efficacy in large trials in Africa and the Americas.<sup>3</sup>

**Viral hepatitis** may also result in vomiting and diarrhoea that may follow a non-specific prodromal illness characterised by headache, myalgia, arthralgia, nausea and anorexia with subsequent jaundice.<sup>3</sup>

**Adenoviruses** are frequently identified from stool culture and implicated as a cause of diarrhoea in children. They have also been linked to cases of intussusception.

### PROTOZOAL GASTROENTERITIS

#### Giardiasis

Infection with *Giardia lamblia* particularly affects children, tourists and immunosuppressed individuals. In cystic form, it remains viable in water for up to 3 months and infection usually occurs by ingesting contaminated water. Its flagellar trophozoite form attaches to the duodenal and jejunal mucosa, causing inflammation.<sup>3</sup>

After an incubation period of 1–3 weeks, there is diarrhoea, abdominal pain, weakness, anorexia, nausea and vomiting. On examination, there may be abdominal distension and tenderness. Chronic diarrhoea and malabsorption may occur, with bulky stools that float. Stools obtained at 2–3-day intervals should be examined for cysts. Duodenal or jejunal aspiration by endoscopy

gives a higher diagnostic yield. A number of stool antigen detection tests are available. Jejunal biopsy specimens may show *G. lamblia* on the epithelial surface.<sup>3</sup>

### **Cryptosporidiosis**

*Cryptosporidium* spp. are coccidian protozoal parasites of humans and domestic animals. Infection is acquired by the faecal–oral route through contaminated water supplies. The incubation period is approximately 7–10 days and is followed by watery diarrhoea and abdominal cramps. The illness is usually self-limiting but in immunocompromised patients, especially those with HIV, the illness can be devastating, with persistent severe diarrhoea and substantial weight loss.<sup>3</sup>

### **Homoeopathy for Gastroenteritis**

A stool culture must be done before any remedy is prescribed and a proper diet must be started immediately. Homeopathic remedies will help in the acute, subacute, and chronic phases of the illness and during the convalescence.<sup>4</sup>

-- copious diarrhea :

- ALOE 4C, or PODOPHYLLUM 4C

-- a lot of nausea and vomiting :

- ANTIMONIUM CRUDUM 4C, or IPECA 4C

-- severe case :

- ARSENICUM ALBUM 4C, then CUPRUM METAL 4C, then VERATRUM ALBUM 4C

-- in case of exhaustion; bloody stools; intense thirst :

- one dose, as needed : PHOSPHORUS 9C, then 12C, then 15C

-- in case of food poisoning by seafood or water :

- one dose, as needed : PARATYPHOIDINUM B 9C, then 12C, then 15C

### References:

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2. The Top 10 causes of Death; <https://www.who.int/news-room/fact-sheets/detail/the-top-10-causes-of-death>; accessed on 27-10-2020
3. STUART H RALSTON et al., Davidson's Principles and Practice of Medicine; 23rd Edition
4. BOUKO LEVY M., Homoeopathic and Drainage Repertory

# FREEDOM TO EAT AND DIGEST WELL



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## Digestion

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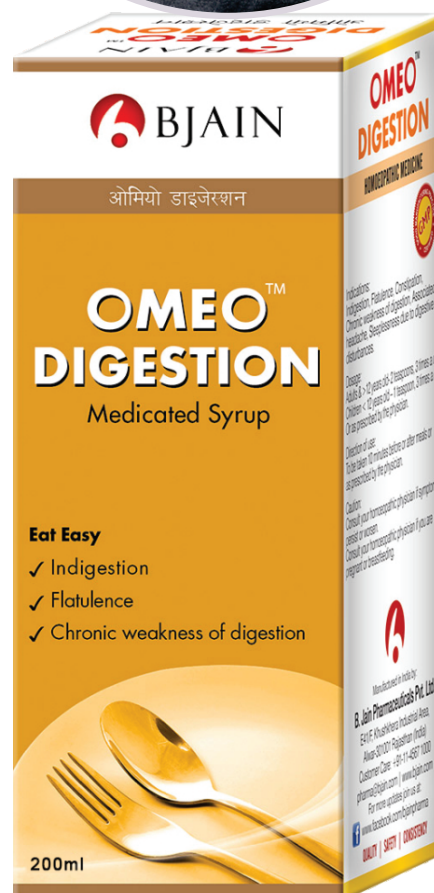
### Indications:

- Indigestion • Flatulence • Constipation
- Chronic weakness of digestion

### Composition:

Natrum phosphoricum	2X	10.0%
Robinia pseudocacia	2X	10.0%
Capsicum annum	2X	10.0%
Acidum sulphuricum	3X	10.0%
Phosphorus	5X	10.0%
Excipients		q.s.
Alcohol content		9.0%v/v

**Dosage :** 2 teaspoons, 3 times a day  
or as prescribed by the physician.



**Pack sizes available:**  
60ml | 100ml | 200ml | 500ml

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# Sticta pulmonaria (lungwort)



**Botanical name :** Lobaria pulmonaria (L)  
Haffm Family: Stictaceae

**Known :** English : Lungwort; French :  
Pulmonaire de Chene; German :  
Langenkraut.

**Part used :** Whole lichen.

**Distribution :** Europe and north America and  
Asia.

**CLINICAL<sup>1</sup> :** Allergies. Angina pectoris. Anus, pain. Asthma. Bronchitis. Catarrh. Clergyman's sore throat. Cold. Coughs. Diabetes. Diarrhea. Glands, swollen. Hay fever. Headaches. Housemaid's knee. Hysteria. Influenza. Laryngitis. Lung disorders. Measles, cough. Migraine. Milk, scanty. Neuralgia. Ozaena. Post-nasal catarrh. Pott's disease. Rheumatism. Seminal emissions. Sick headache. Sleeplessness. Syphilis. Tracheitis. Tuberculosis.

Causations : Ill effects of falls or hemorrhages.<sup>1</sup>

## Indications :

- ✓ Feels as if floating in air. Confusion of ideas, patient must talk.<sup>1</sup>
- ✓ Acute inflammation of the knee joint. Generalized stiffness in neck and shoulders. Joint is hot and may have a localized redness of the skin.<sup>2</sup> Housemaid's knee.<sup>7</sup>
- ✓ Sprains with swelling and marked redness over injury. Location: Right shoulder.<sup>2</sup>
- ✓ Asthma of the consumptives, when the trouble is associated with splitting headache.<sup>3</sup>
- ✓ In catarrhal headache with fulness and pain at the root of nose, burning in eyes, soreness in eye-balls. Headache worse from sudden change in the temperature, from dry cough, sneezing, during hay fever, with rheumatic pain in joints.<sup>4</sup> Catarrhal headache before discharge appears.<sup>7</sup>
- ✓ Diarrhoea, with much mucus, associated with cough.<sup>5</sup>
- ✓ "In sleeplessness of children, after surgical operations, (setting fractured leg, e.g. ), I have found it to act like a charm."--F.<sup>6</sup>
- ✓ Cough after measles [Sang.]; worse towards evening and when tired. Pulsation from right side of sternum down to abdomen. Tracheitis, facilitates expectoration.<sup>7</sup>

**Prescribed dose :** Tincture, to sixth potency<sup>7</sup>

## References:

1. MURPHY R., Homeopathic Remedy Guide
2. MORRISON R., Desktop Companion to Physical Pathology
3. FARRINGTON E. A., Comparative Materia Medica
4. GUPTA R.L., Directory of Diseases and Cures in Homeopathy
5. COWPERTHWAITA A.C., Textbook of Materia Medica and Therapeutics
6. BURT W.H., Characteristic Materia Medica
7. BOERICKE W., Pocket Manual of Homeopathic Materia Medica





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200ml

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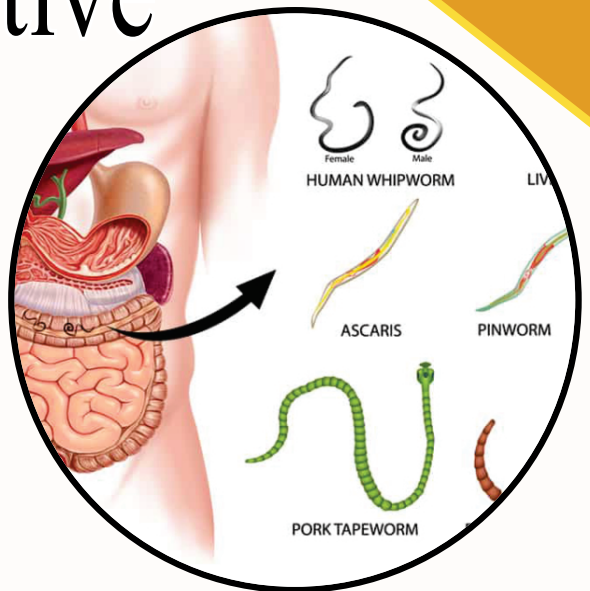
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# For Safe & Effective Deworming

## Worm Rid Drops



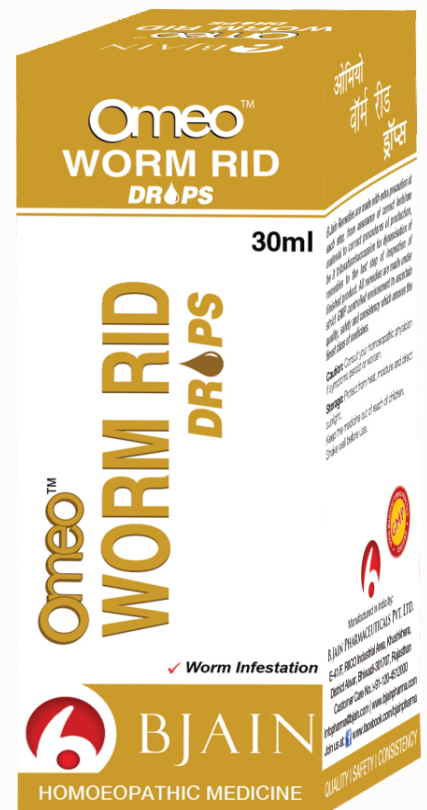
### Indications:

For effective de-worming of the gut .  
Helps in easy expulsion of gut parasites like ascarides , pinworms, hookworms, tapeworms and flukes.

### Composition :

Artemisia vulgaris	3X	10% v/v
Cina	3X	10% v/v
Filix mas	3X	10% v/v
Graphites	3X	10% v/v
Mercurius corrosivus	6X	10% v/v
Excipients		q.s.
Alcohol content		36% v/v

**Dosage:** 10-15 drops to be diluted with water and taken 2 or 3 times a day or as prescribed by the physician.



Pack sizes available: 30ml

Quality | Safety | Consistency



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## HELMINTHIASIS AND ITS BIOCHEMIC TREATMENT

The worms that infest human gut are well known as hookworms, pinworms, threadworms etc. and are taken as benign health conditions but through this article we will relook into an elaborate classification of worms infesting human body and common symptoms and complications arising therefrom. We will also read about the biochemic salts that have been documented to be effective for helminthiasis in the later section.

Helminths (from the Greek helmins, meaning worm) include three groups of parasitic worm, large multicellular organisms with complex tissues and organs<sup>1</sup>:

- ⊙ Nematodes or roundworms
- ⊙ Trematodes or flukes
- ⊙ Cestodes or tapeworms

### INTESTINAL HUMAN NEMATODES

Adult nematodes living in the human gut are of two types<sup>1</sup>:

- the hookworms, having a soil stage in which they develop into larvae that then penetrate the host.
- nematodes that survive in the soil merely as eggs, which have to be ingested for their life cycle to continue.

Soil-transmitted nematode infections can be prevented by avoidance of faecal soil contamination (adequate sewerage disposal) or skin contact (wearing shoes), and by strict personal hygiene<sup>1</sup>.

#### **Ancylostomiasis (hookworm)**

*Ancylostoma duodenale* or *Necator americanus* is the causative organism. The adult hookworm is 1 cm long and inhabits the duodenum and upper jejunum. Eggs are passed in the faeces and develop into larvae in warm, moist, shady soil which penetrate human skin and are carried to the lungs. After entering the alveoli, they ascend the bronchi, are swallowed and mature in the small intestine 4–7 weeks after infection. The worms attach to the mucosa of the small intestine and withdraw blood. The mean daily blood loss from one *A. duodenale* is 0.15 mL and that from *N. americanus* 0.03ml. Hookworm infection is a leading cause of anaemia in the tropics and subtropics.<sup>1</sup>

#### **Clinical features**

An allergic dermatitis, usually on the feet (ground itch), may be experienced at the time of infection. The passage of the larvae through the lungs in a heavy infection causes a paroxysmal cough with blood-stained sputum. When the worms reach the small intestine, vomiting and epigastric pain resembling peptic ulcer disease may occur. Sometimes, frequent loose stools are passed. The degree of iron and protein deficiency depends not only on the worm burden but also on patient nutrition and iron stores. Anaemia with high-output cardiac failure may result. The mental and physical development of children may be delayed in severe infection.<sup>1</sup>

#### **Investigations**

There is eosinophilia. The characteristic ovum can be recognized in the stool. If hookworms are present in numbers sufficient to cause anaemia, faecal occult blood testing will be positive.<sup>1</sup>

#### **Strongyloidiasis (threadworm)**

*Strongyloides stercoralis* is a small nematode (2 mm × 0.4 mm) that parasitises the mucosa of the upper part of the small intestine, often in large numbers, causing persistent eosinophilia. The eggs hatch in the bowel but only larvae are passed in the faeces which moult in moist soil and become the infective filariform larvae. After penetrating human skin, some intestinal larvae develop and penetrate the mucosa or the perianal skin and lead to autoinfection and persistent infection. Strongyloidiasis occurs in the tropics and subtropics, and is especially prevalent in the

Far East.<sup>1</sup>

### **Clinical features**

The classic triad of symptoms consists of abdominal pain, diarrhoea and urticaria. Cutaneous manifestations, either urticaria or larva currens (a highly characteristic pruritic, elevated, erythematous lesion, rapidly advancing along the course of larval migration), are characteristic. Systemic strongyloidiasis (the Strongyloides hyperinfection syndrome), with dissemination of larvae throughout the body, occurs with immune suppression (HIV or HTLV-1 infection, immunosuppressant treatment). Patients present with severe, generalised abdominal pain, abdominal distension and shock. Massive larval invasion of the lungs causes cough, wheeze and dyspnoea; cerebral involvement has manifestations ranging from subtle neurological signs to coma.<sup>1</sup>

### **Investigations**

There is eosinophilia. Serology (ELISA) is helpful but the faeces should be examined microscopically for motile larvae; excretion is intermittent and so repeated examinations are necessary. Larvae may be found in jejunal aspirates or detected using the string test. Larvae may also be cultured from faeces.<sup>1</sup>

### **Ascaris lumbricoides (roundworm)**

This pale yellow nematode is 20–35 cm long. Humans are infected by eating food contaminated with mature ova. Ascaris larvae hatch in the duodenum, migrate through the lungs, ascend the bronchial tree, are swallowed and mature in the small intestine. This tissue migration can provoke both local and general hypersensitivity reactions, with pneumonitis, eosinophilic granulomas, wheezing and urticaria.<sup>1</sup>

### **Clinical features**

Intestinal ascariasis causes symptoms ranging from vague abdominal pain to malnutrition. The large size of the adult worm and its tendency to aggregate and migrate cause obstructive complications. Obstruction can be complicated further by intussusception, volvulus, haemorrhagic infarction and perforation. Other complications include blockage of the bile or pancreatic duct and obstruction of the appendix by adult worms.<sup>1</sup>

### **Investigations**

The diagnosis is made microscopically by finding ova in the faeces. Adult worms are frequently expelled rectally or orally. Occasionally, the worms are demonstrated radiographically by a barium examination. There is eosinophilia.<sup>1</sup>

### **Enterobius vermicularis (threadworm)**

This helminth is common worldwide and affects mainly children.

### **Clinical features**

The female lays ova around the anus, causing intense itching, especially at night. The ova are often carried to the mouth on the fingers and so reinfection or human-to-human infection occurs. In females, the genitalia may be involved. The adult worms may be seen moving on the buttocks or in the stool.<sup>1</sup>

### **Investigations**

Ova are detected in stool samples or by collecting them on a perianal swab or applying the adhesive surface of cellophane tape to the perianal skin in the morning. This is then examined on a glass slide under the microscope.<sup>1</sup>

### **Trichuris trichiura (whipworm)**

Whipworm infections are common worldwide with poor hygiene. Infection follows ingestion

## HELMINTHIASIS AND ITS BIOCHEMIC TREATMENT

of earth or food contaminated with ova, which have become infective after lying for 3 weeks or more in moist soil. The adult worm is 3–5 cm long and has a coiled anterior end resembling a whip. Whipworms inhabit the caecum, lower ileum, appendix, colon and anal canal. There are usually no symptoms, but intense infections in children may cause persistent diarrhoea or rectal prolapse, and growth retardation. The diagnosis is readily made by identifying ova in faeces.<sup>1</sup>

### TREMATODES (FLUKES)

These leaf-shaped worms are parasitic to humans and animals. Their complex life cycles may involve one or more intermediate hosts, often freshwater molluscs. Flukes are categorized as:

1. Blood flukes
2. Lung flukes
3. Hepatobiliary or Liver flukes
4. Intestinal flukes

### Schistosomiasis

Caused by blood flukes, schistosomiasis is a major cause of morbidity in the tropics. The species commonly causing disease in humans are: *Schistosoma haematobium*, *S. mansoni*, *S. japonicum*, *S. mekongi* and *S. intercalatum*.<sup>1</sup>

The ovum is passed in the urine or faeces of infected individuals and gains access to fresh water, it then enters its intermediate host, a species of freshwater snail, and multiplies and gets released from them as fork-tailed cercariae into the water from where they get into the humans by penetrating the skin or the oral mucous membrane. They pass through the lungs; then they are carried by the blood stream to the liver and portal vein, where they mature. The male worm is up to 20 mm in length and the more slender cylindrical female, usually enfolded longitudinally by the male, is longer. Within 4–6 weeks of infection, they migrate to the venules draining the pelvic viscera, where the females deposit ova.<sup>1</sup>

### Clinical features

During the early stages of infection, there may be itching lasting 1–2 days at the site of cercarial penetration ('swimmer's itch'). After a symptom-free period of 3–5 weeks, acute schistosomiasis (Katayama syndrome) may present with allergic manifestations, such as urticaria, fever, muscle aches, abdominal pain, headaches, cough and sweating. On examination, hepatomegaly, splenomegaly, lymphadenopathy and pneumonia may be present. The features subside after 1–2 weeks. Chronic schistosomiasis is due to egg deposition and occurs months to years after infection. Residents of schistosomiasis-endemic areas often present with chronic urinary tract pathology or portal hypertension.<sup>1</sup>

### Investigations

There is marked eosinophilia. Serological tests (ELISA) are useful as screening tests. In *S. haematobium* infection, dipstick urine testing shows blood and albumin. The eggs can be found by microscopic examination of the centrifuged deposit of terminal stream urine. Ultrasound assesses the urinary tract and Cystoscopy reveals 'sandy' patches, bleeding mucosa and later distortion.

In a heavy infection with *S. mansoni* or *S. japonicum*, the characteristic egg with its lateral spine can usually be found in the stool. When the infection is light or of long duration, a rectal biopsy can be examined for ova. Sigmoidoscopy may show inflammation or bleeding.<sup>1</sup>

### Liver flukes

Liver flukes infect at least 20 million people and remain an important public health problem in endemic areas. They are associated with abdominal pain, hepatomegaly and relapsing cholangitis.

*Clonorchis sinensis* and *Opisthorchis felinus* are major aetiological agents of bile duct cancer.<sup>1</sup>

### CESTODES (TAPEWORMS)

Cestodes are ribbon-shaped worms that inhabit the intestinal tract. They have no alimentary system and absorb nutrients through the tegumental surface. The anterior end, or scolex, has suckers for attaching to the host. From the scolex, a series of progressively developing segments arise, the proglottides, which may cross fertilise and continue to show active movements when shed. Ova, remain viable for weeks, and may be consumed by the intermediate host. Larvae liberated from the ingested ova form larval cysticerci. Tapeworms cause two distinct patterns of disease: either intestinal infection caused by *Taenia saginata* (beef tapeworm), *Taenia asiatica*, cysticerci of *Taenia solium* and *Diphyllobothrium latum* (fish tapeworm) or systemic cysticercosis (systemic infection from larval migration) caused by ova of *Taenia solium*.

*Echinococcus granulosus* (dog tapeworm) does not cause human intestinal infection, but causes hydatid disease (which is analogous to cysticercosis) following ingestion of ova and subsequent larval migration.<sup>1</sup>

#### Intestinal tapeworm

Humans acquire tapeworm by eating under-cooked beef, under-cooked pork or under-cooked freshwater fish. Usually, only one adult tapeworm is present in the gut but up to 10 have been reported. The ova of all the three *Taenia* are indistinguishable microscopically.<sup>1</sup>

#### *Taenia solium*

*T. solium*, the pork tapeworm, is common in central Europe, South Africa, South America and parts of Asia. The adult worm is found only in humans following the ingestion of uncooked pork containing cysticerci.

#### *Taenia saginata*

Infection with *T. saginata* or beef tapeworm occurs in all parts of the world. The adult worm may be several metres long and produces little or no intestinal upset in human beings, but identification of segments in the faeces or on underclothing may distress the patient. Ova may be found in the stool.

#### *Taenia asiatica*

*T. asiatica* is a newly recognised species of *Taenia*, restricted to Asia. It is acquired by eating uncooked meat or viscera of pigs.

#### Cysticercosis

Human cysticercosis is acquired by ingesting *T. solium* tapeworm ova, from either contaminated fingers or food. The larvae are liberated from eggs in the stomach, penetrate the intestinal mucosa and are carried to many parts of the body, where they develop and form cysticerci, 0.5–1 cm cysts that contain the head of a young worm. They do not grow further or migrate. Common locations are the subcutaneous tissue, skeletal muscles and brain.<sup>1</sup>

#### Clinical features

Superficial cysts can be palpated under the skin or mucosa as pea-like ovoid bodies, but cause few or no symptoms and will eventually die and become calcified. Heavy brain infections, especially in children, may cause features of encephalitis. More commonly, however, cerebral signs do not occur until the larvae die, 5–20 years later. Epilepsy, including new-onset focal seizures, personality changes, staggering gait and signs of hydrocephalus are the most common features.<sup>1</sup>

#### Investigations

Calcified cysts in muscles can be recognised radiologically. In the brain, however, less calcification takes place and larvae are only occasionally visible by plain X-ray; CT or magnetic resonance imaging (MRI) will usually show them. Epileptic fits starting in adult life suggest the possibility of cysticercosis if the patient has lived in or travelled to an endemic area. The subcutaneous tissue should be palpated and any nodule excised for histology. Radiological examination of the skeletal muscles may be helpful. Antibody detection

## HELMINTHIASIS AND ITS BIOCHEMIC TREATMENT

is available for serodiagnosis.<sup>1</sup>

### **Echinococcus granulosus (Taenia echinococcus)** and hydatid disease

Dogs are the definitive hosts of the tiny tapeworm *E. granulosus*. The larval stage, a hydatid cyst, normally occurs in sheep, cattle, camels and other animals that are infected from contaminated pastures or water. By handling a dog or drinking contaminated water, humans may ingest eggs. The embryo is liberated from the ovum in the small intestine and invades the blood stream, spreading to the liver. The resultant cyst grows very slowly and give rise to daughter cysts, or a germinating cystic brood capsule in which larvae (protoscolices) develop. Over time, some cysts calcify and become non-viable. The disease is common in the Middle East, North and East Africa, Australia and Argentina.<sup>1</sup>

### **Clinical features**

A hydatid cyst is typically acquired in childhood and, after growing for years, may cause pressure symptoms. In nearly 75% of patients with hydatid disease, the right lobe of the liver is invaded and contains a single cyst. In others, a cyst may be found in lung, bone, brain or elsewhere.<sup>1</sup>

### **Investigations**

The diagnosis depends on the clinical, radiological and ultrasound findings in a patient that has close contact with dogs in an endemic area. Complement fixation and ELISA are positive in 70–90% of patients.

As we can see the common symptoms coming out due to worm infestations are:

- Diarrhea, nausea, or vomiting
- Formation of excessive gas/abdominal distention
- Unexplained fatigue
- Loosing flesh while eating well
- Abdominal pain or tenderness
- Allergic skin reactions and subcutaneous cystic nodules

Extreme cases can show serious consequences affecting vital organs viz. liver, lungs and brain. It thus becomes imperative to keep infants and toddlers safe by ensuring strict hygiene, regular de-worming regimen and paying heed to the appearance of symptoms stated above.

For de-worming the conventional regime includes:

A single dose of albendazole (400 mg) OR mebendazole 100 mg twice daily for 3 days may be used. Anaemia and heart failure associated with worm infection respond well to oral iron, even when severe. Ivermectin (150–200 µg/kg) is the drug of choice for threadworms and roundworms besides the usual course of albendazole as stated above.<sup>1</sup>

### **BIOCHEMIC TREATMENT**

- **Ferrum phosphoricum** Intestinal worms, predisposition to passing undigested food. Thread-worms.
- **Kalium muriaticum** Small white thread-worms, causing itching at the anus; white tongue, give Natrum phos. in alternation.
- **Calcarea fluorica** Intestinal, long, round, or thread-worms with characteristic symptoms of acidity, or picking of the nose, occasional squinting;

Pain in the bowels, restless sleep. Itching of the anus, especially at night in bed, face white about the mouth or nose. Grinding of the teeth in children. Pin-worms. This remedy probably acts by destroying the excess of lactic acid which seems to be necessary for the life of these worms.<sup>2</sup>

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