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A HANDBOOK OF OF WORM INFESTATION WITH HOMOEOPATHIIC MANAGMENT

JV'n Dr. Ritu Sharma

JAYOTI VIDYAPEETH WOMEN'S UNIVERSITY, JAIPUR
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Faculty of Homoepoathic Science

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1. INTRODUCTION

"Children are the wealth of tomorrow, take care of them, If you wish to have a strong India ever ready to meet various challenges,, Pandit Jawahar Lal Nehru.

Worm infestation is an infection of the intestinal tract caused by the various types of worm including ascaris [round worm], entrobius [pinworm], and trichinell aspiralis. Worm infestation is common in children all over the world.[(1)]

Worms may be of many shapes and sizes, from microscopic "pinworms" to tape-worms" that are several feet long. Most of these worms live in the intestinal tract. Any of several types of worms may live in the human body as parasites (infestation), sometimes causing mild to severe illness. These worms, which infest the blood, intestines or organs (e.g., liver, lungs), include flukes, hookworms, pinworms, tapeworms and whipworms. The sizes of the worms range from microscopic to about 1 meter. Worms may be acquired by eating undercooked, infected meat, by contact with soil or water containing worm larvae, or ingestion of worm eggs from soil contaminated by infected faeces.[(2)]

The warm and moist climate of tropical & sub tropical countries provide the ideal environment for the survival of parasite eggs or larvae.[(2)]

The high prevalence of Worm infestation is closely correlated to poverty, poor environmental hygiene and impoverished health services. Worm infestation contributes to high morbidity in children.[(3)]

According to WHO estimates, 870 million children live in the area of high prevalence Africa, South Asia and South America are the most affected regions of the world.[(4)]

India alone contributes nearly 25% to the total global cases with 220.6 million children in need of preventive chemotherapy. [(4)]

And in other study, according to the World Health Organization estimate; globally there are 800-1000 million cases of Ascariasis, 700-900 million of Hook Worm infection, 500 millions of Trichuriasis, 200 million of Giardiasis and 500 million of Entamoeba histolytica.[(5)]

Sign and symptoms of worm infestation are diarrhoea, abdominal pain, anaemia and malnutrition leading to stunted physical and mental growth. [(3)]

Helminthic infestation lead to nutritional deficiency and impaired physical developments, which will have negative consequences on cognitive function and learning ability. Intestinal parasitic infection varies considerably from place to place in relation to the disease. [6]

Ascaris lumbricoides is an intestinal roundworm. Ascariasis occurs globally and is one of the most prevalent human helminthiasis in the world. It is most common in tropical areas of the world where environmental conditions are optimal for maturation of ova in the soil. Approximately 1 billion people are estimated to be infected. The highest prevalence is thought to be in high poverty areas. Key factors linked with higher prevalence of infection include poor socioeconomic conditions. Even though infection can occur at any age, the highest rate is in preschool or early school-age children. Transmission is primarily hand to mouth.[7]

A careful screening of the identified literature yielded 39 studies that reported the prevalence of soil transmitted helminth infections from 19 different states of India. Ascaris lumbricoides was the most prevalent parasite. Higher than 50% prevalence was reported from six states. [4]

Ascaris lumbricoides clinically manifested by vague symptoms of nausea, abdominal pain and cough. Live worm are passed in the stool or vomited. Occasionally, they may produce intestinal obstruction or may migrate into the peritoneal cavity. [8]

The highest prevalence of ascariasis occurs in tropical countries like India where warm, wet climates provide environmental conditions. Overall prevalence of intestinal worm infection was found to be 49.38% in India. Ascaris was the most common parasite [46.88%] followed by Taenia [2.1] and Hymenolepis nana [0.21].[9] Transmission occurs mainly via ingestion of water or food [raw vegetables or fruit in particular] contaminated with Ascasis lumbricoides eggs and occasionally via inhalation of contaminated dust. Children playing in contaminated soil may acquire the parasite from their hands. So, considering the incidence of Ascaris lumbricoides in India, this study has opted to observe the efficacy of homoeopathic medicines in case of worm infestation with emphasis on Ascaris lumbricoides on the basis of totality of symptoms. The effort is to treat such type of condition effectively by prescribing homoeopathic remedies on the basis of symptoms similarity in Homoeopathic Outdoors as well as to develop a firm belief on Homoeopathic system as an effective mode of treatment.

2. REVIEW OF LITERATURE

2.1 HISTORICAL VIEW

2.1.1 DISCOVERY OF THE HELMINTH WORMS

- Because of the large size of some helminths, such as the roundworm *Ascaris* and the tapeworms, it is practically certain that our earliest ancestors must have been aware of these common worms.
- There is some evidence for this assumption based on contemporary studies of primitive tribes in Sarawak and North Borneo, where Hoeppli found that most people are aware of their intestinal roundworms and tapeworms.
- Some historians have identified references to helminth worms and their diseases in the Bible, but the relevant passages are open to several interpretations.
- Among the Egyptian medical papyri, the Ebers papyrus refers to intestinal worms, and these records can be confirmed by the discovery of calcified helminth eggs in mummies dating from 1200 BC.
- The Greeks, particularly Hippocrates (460 to 375 BC), knew about worms from fishes, domesticated animals, and humans.
- Roman physicians including Celsus (25 BC to AD 50) and Galen (Galenus of Pergamon, AD 129 to 200) were familiar with the human roundworms *Ascaris lumbricoides* and *Enterobius vermicularis* and tapeworms belonging to the genus *Taenia.*
- Somewhat later, Paulus Aegineta (AD 625 to 690) clearly described *Ascaris, Enterobius,* and tapeworms and gave good clinical descriptions of the infections they caused Following the decline of the Roman Empire, the study of medicine switched to Arabic physicians, including Avicenna, who recognized not only *Ascaris, Enterobius,* and tapeworms but also the guinea worm, *Dracunculus medinensis,* which had been recorded in parts of the Arab world, particularly around the Red Sea, for over 1,000 years.

  The medical literature of the Middle Ages is very limited, but there are many references to parasitic worms. In some cases, they were recognized as the possible causes of disease but in general, the writings of the period reflect the culture, beliefs, and ignorance of the time.

The science of helminthology really took off in the 17th and 18th centuries following the reemergence of science and scholarship during the Renaissance period. Linnaeus described and named six helminth worms**, *Ascaris lumbricoides, Ascaris vermicularis* (*Enterobius vermicularis*), *Gordius medinensis* (*Dracunculus medinensis*), *Fasciola hepatica, Taenia solium* and *Taenia lata* (*Diphyllobothrium latum*).**

Thereafter, more species were described until at the beginning of the 20th century, 28 species had been recorded in humans, a number that has now grown to about 300 species, including accidental and very rare records. Even if some of these are doubtful, at least 280 species are recognized by Ashford and Crewe in their annotated checklist.

2.1.2 ASCARIS AND ASCARIASIS

- *Ascaris lumbricoides,* the large roundworm, is one of six worms listed and named by Linnaeus; its name has remained unchanged ever since.
- One billion people are now estimated to be infected with this worm.
- The adult worm lives in the intestine, and the female produces eggs that pass out with the feces, and the larvae within the eggs develop to the infective stage in soil.
- Humans become infected when food contaminated with infective eggs is eaten and the larvae emerge in the intestine.
- The worms do not mature immediately but migrate around the body, reaching the lungs, from which they are coughed up and swallowed and then develop into adults in the intestine.
- Ascariasis is an ancient infection, and *Ascaris lumbricoides* eggs have been found in human coprolites from Peru dating from 2277 BC and Brazil from about 1660 to 1420 BC.
- In the Old World, there are records of *Ascaris lumbricoides* in a Middle Kingdom Egyptian mummy dating from 1938 to 1600 BC and from China in the Ming Dynasty between AD 1368 and 1644.
- The presence of this large worm, which reaches a length of 15 to 35 cm and is often voided in the feces or sometimes emerges from the anus, is very obvious.
- There are extensive written records including the Egyptian medical papyri, the works of Hippocrates in the fifth century BC, Chinese writings from the second and third centuries BC, and texts of Roman and Arabic physicians.

- Surprisingly, it was not until the late 17th century that the detailed anatomy of the worm was described, first by Edward Tyson, an English physician, and shortly afterward by the Italian Francesco Redi, who described the worms in his book ***Osservazioni Intorno Agli Animali Viventi che si Trovano Negli Animali Viventi,*** one of the first books on parasitology.
- These two publications, together with that of Tyson on the tapeworms of humans, can be considered to mark the beginnings of the sub discipline of helminthology, which reached a peak in the 19th century. It was also during this period that the first real attempts were made to understand the infections caused by *Ascaris* and other worms and how they might be treated. In the meantime, the problem for those studying *Ascaris* and other parasitic nematodes was how the parasite's eggs infected a new host after leaving the original host.
- The life cycle in humans, including the migration of the larval stages around the body, was discovered only in 1922 by a Japanese pediatrician, Shimesu Koino, who infected both a volunteer and himself and realized what was happening when he found large numbers of larvae in his sputum. There are good accounts of the history of ascariasis by Grove and Goodwin.[10]

2.2 MODERN VIEW

The word "*helminth*" from the Greek, means "worm" and originally referred to intestinal worms.[11]

Parasite- Parasite is an organism living in or on another living organism (host) for food and shelter, benefiting at the expense of the host.[12]

Classes of parasites

- **Ecto-parasite (Ectozoa):** Lives outside on the surface of the body of the host.
- **Endo-parasite (Entozoa):** Lives inside the body of the host: in the blood, tissues, body cavities, digestive tract and other organs.
- **Temporary parasite:** Visits its host for a short period.
- **Permanent parasite:** Leads a parasitic life throughout the whole period of its life.
- **Facultative parasite:** Lives a parasitic life when opportunity arises.
- **Obligatory parasite:** Cannot exist without a parasitic life.
- **Occasional or Accidental Parasite:** Attacks an unusual host.

- **Wandering or Aberrant parasite:** Happens to reach a place where it cannot live.

Host- An organism which harbours the parasite.[13]

Infestation- It is defined as the lodgement, development and reproduction of parasites (particularly helminthes) in the host or parasitic invasion of the organs and tissue. [12]

2.2.1 HELMENTHOLOGY

Definition-It is the study of parasitic worm (Helminth) and their effect on the host.[14]

- Helmenthology is the science whose objective is the study of worms or helminths. In the case of medical helmenthology, it refers specifically to those helminths that affect or potentially affect human beings. This complex science comprises the biomedical study of helminths morphology, biology and systematic and epidemiology, diagnosis, treatment, prevention, and methods of controlling the infections caused by these organisms.[15]
- The helminthic parasites are multicellular, bilaterally symmetrical animals having three germ layers (triploblastic metozoa).[13]

According to WHO

- Soil-transmitted helminth infections are among the most common infections worldwide and affect the poorest and most deprived communities. They are transmitted by eggs present in human faeces which in turn contaminate soil in areas where sanitation is poor.
- The main species that infect people are the roundworm (*Ascaris lumbricoides*), the whipworm (*Trichuris trichiura*) and the hookworms (*Necator americanus* and *Ancylostoma duodenale*).

2.2.2 EPIDEMIOLOGY

- **Geographical distribution**

Soil-transmitted helminth infections are widely distributed in tropical and subtropical areas and, since they are linked to a lack of sanitation, occur wherever there is poverty. Latest data estimates indicate that more than 880 million children are in need of treatment for these parasites. [16]

Figure 2.1

Environmental faCctors, social customs and habits of person greatly influence the distribution of parasites and accordingly each parasite has got a specific distribution.

- **Habitat**

  Each parasite, according to the mode of its existence, selects a particular place of abode in the host. The parasite, after entering into the body, may directly establish itself in the place where it is introduced or the parasite, on entering the body through a particular route, may travel through various organs till it reaches its normal abode for its growth to sexual maturity. In some cases, the larval from of the parasite, after getting into its normal habitat, does not develop directly into adult worm but take a circumroutous path and on arrival for the second time at the same place starts growing to maturity, as in the case of *Ascaris lumbricoides*.[13]

2.2.3 Classification

Figure2.2

The helminths of importance to human beings are divided into two main groups showing the following peculiarities.

HELMINTHS

Phylum PLTYHELMINTHES (Class Cestoide & Trematoda)	Phylum NEMATHELMINTHES (Class Nematoda)
Flattened, leaf-like or tape-like and segmented.	Elongated, cylindrical, unsegmented.
Mostly hermaphrodite (monoecious).	Sexes separate (diecious).
Alimentary canal incomplete.	Alimentary canal complete.
Body cavity absent.	Body cavity present.

Tables showing the differences between Cestodes, Trematodes and Nematodes[13]

	CESTODE	**TREMATODE**	**NEMATODE**
Shape:	**Tape-like; segmented.**	**Leaf-like; unsegmented**	**Elongated cylindrical; unsegment.**
Sexes:	**Not separate i.e, hermaphrodite (monoecious).**	**Not separate (monoecious) except Schistosomes which are diecious.**	**Separate (diecious).**
Head End:	**Suckers, often with hooks**	**Suckers, no hooks**	**No suckers, no hooks. Well developed buccal capsule in some sepecies.**
Alimentry canal	**Absent**	**Present but incomplete; no anus.**	**Present and complete; anus present.**
Body Cavity:	**Absent**	**Absent**	**Present**

TABLE 2.1

Classification of Phylum Platyhelminthes [14]

Class	Subclass	Order	Super family	Family	Genus	Species
Cestoidea	Cestoda	1.Pseudophylidea 11.Cyclophyllidea	1.Bothriocephaloidea 1.Taeniodea	1.Diphyllobothridae 1.Taeniidea 11.Hymenolepididae 111. Dilepididae	1.Diphyllobothridum 1.Taenia 11Echinococcus 1.Hymenolapis 1.Dipilidium	1.D.latum T.saginata T.solium E.granulosus H.nana diminuta D D.canium
Trematoda	Digenea	Prosostromata	I.Schistomatoidea II.Fascioloidea III. Opisthorchidae IV.Triglotrematoidea		I.Schistosoma I.Fasiciola II.Fasciolopsis I.Clonorcis I.Paragonimus	S.haetobium Japonicum,mansoni I.F.hepatic II.F.buski I.C.sinensis I.P.westermani

TABLE 2.2

2.2.4 NEMATODE

Nematodes are said to be most worm –like of all helminthes.

- Nematodes are elongated, cylindrical, unsegmented worms with tapering ends. The name 'nematode' means 'thread-like' from 'nema' meaning 'thread'.
- Unlike trematodes and cestodes, all of which are parasitic, most nematodes are free-living from found in soil and water.
- Several species are parasites of plants and are of great economic importance. Many nematodes parasitize invertebrate and vertebrate animals.

The largest number of helminthic parasites of humans belong to the class of nematodes. There are an estimated 500,000 species of nematodes.

1. **General characteristics**

- They are cylindrical, or filariform in shape, bilaterally symmetrical with a secondary **triradiate symmetry at the anterior end.**
- Their body cavity is a **pseudocele.**
- Their body is covered with a **tough outer cuticle.**
- The digestive system is complete.
- Nematodes have simple excretory and nervous systems.

2. **Modes of infection**

- **By ingestion of**

1. Eggs: Ascaris, Enterobius, Trichuris.
2. Larvae within intermediated host: Dracunculus.
3. Encysted larvae in muscle: Trichinella.

- **By penetration of skin:** Ancylostoma, Necotor, strongyloides.
- **By blood-sucking insects:** Filariae.
- **By inhalation of dust containing eggs:** Ascaris, Enterobius.

Classification of Nematodes on the Basis of the Habitat of Adult Worms [17]

Intestinal Human Nematodes	**Somatic Human Nematodes**
Small intestine • Ascaris lumbriciodes (Common round worm) • Ancylostoma duodenale (old world Hook worm) • Necator americanus (American or new world Hook worm) • Strongyloides strercoralis • Trichinella spiracoralis • Capillaria philippinensis **Large intestine** • Trichuris trichiura (Whip worm) • Enterobius vermicularis (Thread pin worm)	**Lymphatics** • Wuchereria bancrofti • Brugia malayi • Brugia timori **Skin/subcutaneous tissue** • Loa loa • Onchocerca volvulus • Dracunculus medinensis (Guinea worm) **Mysentery** • Mansonella ozzardi • Mansonella perstants **Conjunctiva** • Loa loa

TABLE 2.3

Ascaris lumbricoides (The common round worm)

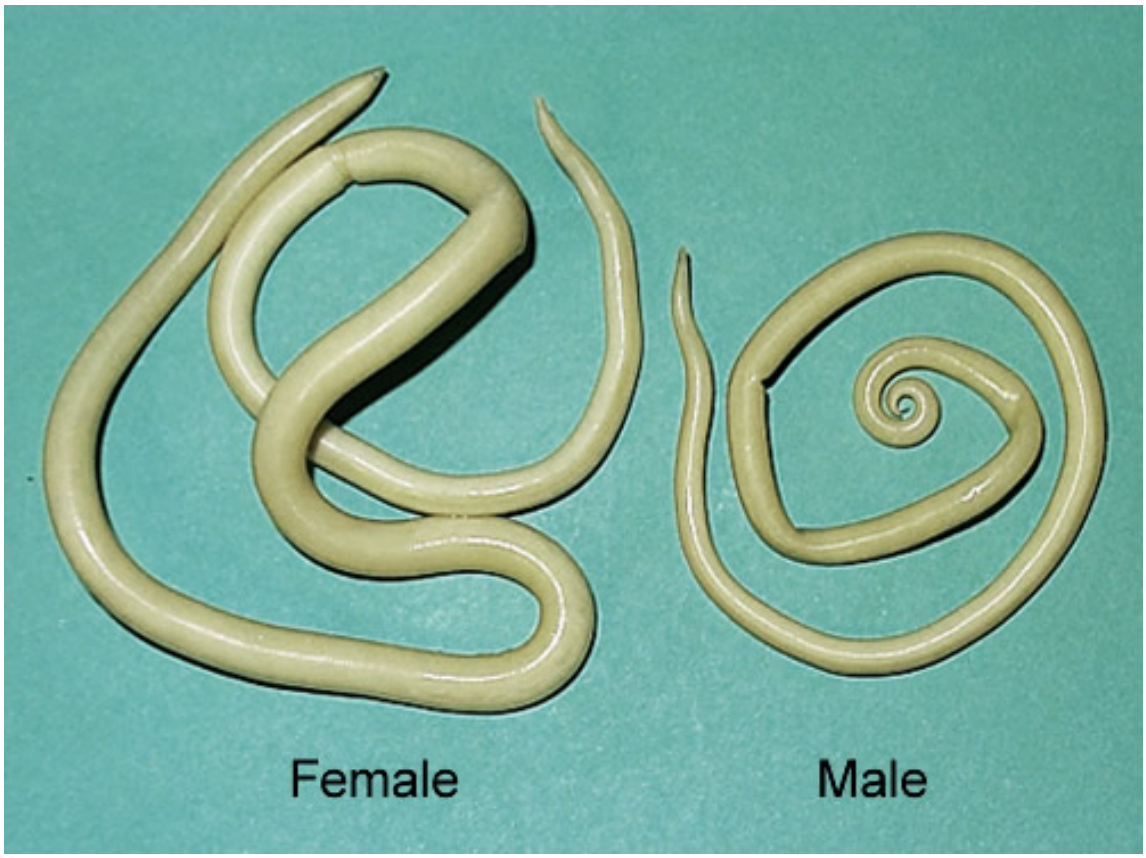


Figure 2.3

1. **Introduction**
2. **Geographical distribution**
3. **Habitat**
4. **Morphology**
5. **Life cycle**
6. **Mode of infection**
7. **Immunology**
8. **Pathogenicity and Clinical Features**
9. **Complications**
10. **Differential Diagnosis**
11. **Laboratory Diagnosis**
12. **Treatment**
13. **Prophylaxis**

1. Introduction

This is the common round worm, being cylindrical in shape, with tapering extremities and light reddish-brown in color. The female may attain a length of fifteen inches; the male eight to ten inches. The eggs are larger than those of the oxyuris, and possess a double shell, the contents being dark and granular. They measure about 1-340 inch in length. The mature female sheds enormous numbers of these ova-according to Eschricht and Leuckart, 160,000 daily. The life-history of the ascarides is not fully understood. They infest mainly the small intestines, although they may be found at any point in the alimentary tract, sometimes even being vomited, and in rare instances inducing death by creeping into the ductus communis choledochus or into the larynx. [18]

2. Geographical distribution

Ascariasis most often affects those living in the warm, moist tropics, but few countries of the world are exempt. In 1947, the world incidence of ascariasis was estimated to be 643 million infected persons (488 million in Asia, 59 million in Africa, 32 million in Europe, 19 million in Russia, 42 million in Central and South America, and 3 million in North America). By 1979 it was estimated that between 800 million and one billion people were infected with *Ascaris*, ranking it third among the ten most common human infections. It is particularly common throughout Asia, especially in China, India, Sri Lanka, Southeast Asia, the Philippines, Japan, Russia, Afghanistan, and Iran. It is also prevalent throughout Africa and Egypt. In countries of Central and South America, the incidence ranges between 12 and 93% depending on the geographic area and climate and thoroughness of the survey. Endemic regions exist in Canada and the United States, especially in the Gulf Coast states and rural parts of the southern Appalachian range, where up to 30% of the population may be infected in some areas.

The incidence of ascariasis is greatest where warm, even temperatures and high humidity allow the eggs to embryonate throughout the year. Overpopulation and poor sanitation and sewage disposal likewise play key roles in the propagation of ascariasis. [19]

3. Habitat

The adult worm lives in the lumen of the small intestine (jejunum) of man and maintains its position by its muscle tone. [13]

4. Morphology

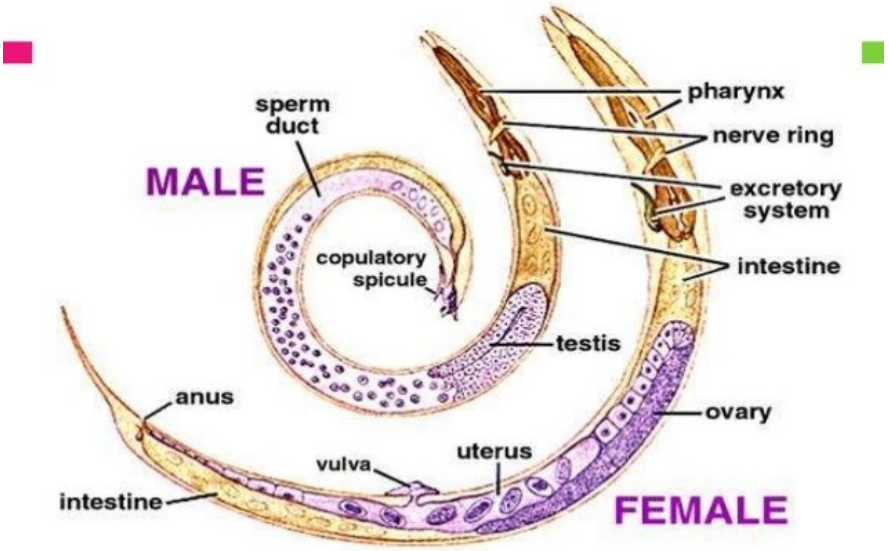


Figure 2.4

1) Adult worm-

- Adult worm is light brown or pink in colour with rounded body that tapers at the ends.
- Female's worms are larger than male's worm.
- At the anterior end, mouth is present which possesses 3 finely toothed lips, one dorsal and two ventral.

2) Adult male worm

- Size: 15-30 cm long, 3-4 cm diameter.
- Posterior end is straight and conical.
- Vulva opens at the ventral surface between anterior and middle ends.

3) Eggs

Eggs passed in the faeces can be fertilised or unfertilised.

I. Fertilised eggs

- Oval shaped, measuring 50-70 um by 40-50 um.
- Golden yellow in colour.
- When passed in the faeces, are in single cell stage (contains a large unsegmented ovum).
- Covered by a thick shell with an outer albumin coat which is thrown into rugosities or mammilations. Outer coat is adhesive and protective.
- Sometimes, eggs are decorticated (outer coat absent).

- Flats in saturated solution of common salt.

II. Unfertilised eggs

- Irregular shape (78-105 um by 38-55 um).
- Longer and narrower than fertilised eggs.
- Having thinner shell with irregular coating of albumin.
- Contains a small atrophied ovum.
- Dose not floats in saturated solution of common salt.

If only unfertilised eggs are seen in the faeces, it signifies that the host is harbouring only female ascaris or the mating had not occurred between male and female worm.

Three shapes of ova

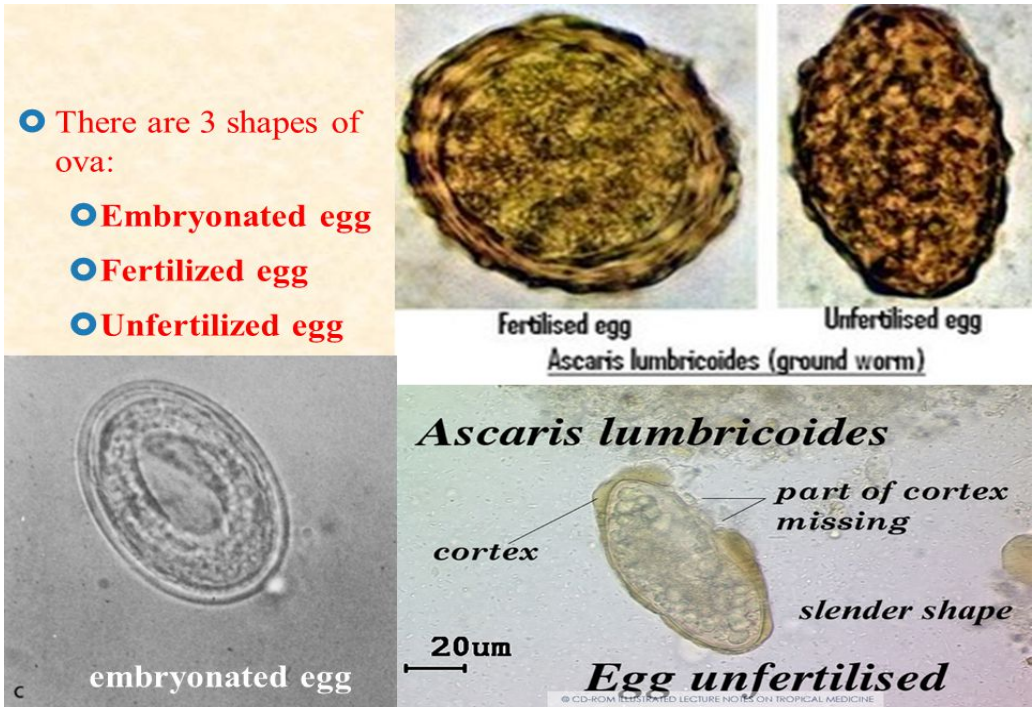


Figure 2.5

5. Life Cycle

Ascaris passes its cycle in one host, man (the definitive host).

1) Fertilised eggs containing unsegmented ovum's are passed in the faeces. *Freshly passed eggs are non infective to man*

2) **Development in soil** in 20-40 days, at a temperature of 22- 24^0 C, **rhabditiform larva** develop from the unsegmented ovum within the eggs shell. ***The egg containing the rhabditiform larva is infective to man.***

3) **Development in man:** Man becomes infected by ingesting the embryonated eggs along with the contaminated food or drinks.

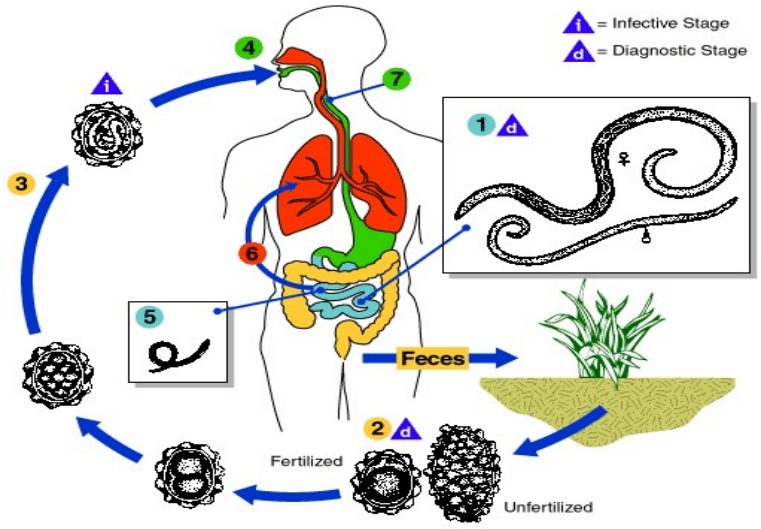
- **In intestine:** Eggs are passed down to the duodenum where egg shell splits off and the rhabditiform larva is librated out.
- **In liver:** The larva penetrates the intestinal tissue, reaches the radicals of portal vein and is carried to the liver via portal circulation in the liver, the larva lives for 3-4 days.
- **In lungs:** From the liver, the larvae are carried by the blood stream to the. Right heart to the pulmonary circulation.

  While in the lungs, the larva grows bigger and moults twice, 1st *moulting on 5th day, 2nd on 10th days.* Breaking through the capillary wall, the larva reaches the lung alveoli.

- **Re-entry in the intestine:** From the lung alveoli, the larva starts migrating toward the trachea to larynx and larva reaches to in the small intestine. Here, it moults again (between 25-29 days) grows into an adult worm and becomes sexually mature in 6-10 weeks.
- Female worm starts discharging eggs within 2 months from the time of infection.

4) Moulting of larva occurs: 1st within the eggs 2nd in the lungs and 1st in the intestine. Adult worm lives for a year in the host and subsequently passes in the faeces.(14)

Life cycle of Ascaris lumbricoides



Ascaris suum the species of roundworm found in pigs, in rare cases may also cause human infection.

- Adult worm live in the lumen of the small intestine. A female may produce approximately 200,000 eggs per day, which are passed with the feces.
- Unfertilized eggs may be ingested but are not infective. Fertile eggs embryonate and become infective after 18 days to several weeks.
- Depending on the environmental conditions (optimum: moist, warm, shaded soil). After infective eggs are swallowed.
- The larvae hatch.
- Invade the intestinal mucosa, and are carried via the portal, then systemic circulation to the lungs.
- The larvae mature further in the lungs (10 to 14 days), penetrate the alveolar walls, ascend the bronchial tree to the throat, and are swallowed.
- Upon reaching the small intestine, they develop into adult worms.
- Between 2 and 3 months are required from ingestion of the infective eggs to oviposition by the adult female. Adult worms can live 1 to 2 years.

6. Mode of infection

- Infection is effected by swallowing ripe Ascaris eggs (embryonated eggs) with raw vegetables cultivated on a soil fertilised by infected human excreta.
- Water –supplies may be contaminated and infection may occur by drinking such water.
- Where soil-pollution is common, the eggs may directly be conveyed to the mouth by dirty fingers.
- Infection may also occur by inhalation of desiccated egg in the dust reaching the pharynx and swallowed. The eggs, instead of being swallowed, may hatch on moist mucous surface of the upper air passage and the larvae may directly penetrate into the blood stream.

  The infective stage eggs are invariably obtained from human sources.

  Infecting Agent- Embryonated egg.

  Migration of larvae-Through lungs.

Portal of entry- Alimentary canal .

Site of Location-Small intestine.

7. Immunology

A partial immunity may be acquired by man, induced by the migrating larvae. Antigens are liberated during the moulting period of the Larvae and produce protective antibodies which lower the worm burden and play a part in the immune response.

A severe allergic reaction (urticaria and fall on of blood pressure) occurs when the larvae reach the small intestine for the second time. Eosinophilic count is increased at the time of tissue invasion. Specific antibodies (complement-fixing and precipitating) can be demonstrated in Ascaris infection. Hypersensitivity to Ascaris is determined by skin test. (13)

8. Pathogenicity and clinical features

Pathogenic effect of Ascaris are due to adult parasite or by the larvae and due to certain chemical substance produced by them.

Due to larvae-

I. In the early stage of a heavy infection the migration of larvae to lung gives rise to numerous minute haemorrhages and to oedema and exudation, in severe infections they may produce, symptoms resembling lobar pneumonia and may cause death in young man.

II. Ascaris Pneumonia (*Loeffer's Syndrome)* In heavy infections typical symptoms of pneumonia such as fever, cough and dyspnoea may appear. Sputum which is often blood-tinged may contain Ascaris larvae.(13)

Special note- Parasites causing Pneumonitis or Loffler's syndrome.

- Migrating larvae of:
  - -Ascaris lumbricoides
  - -Strongyloides setrcoralis
  - -Ancylostoma duodenale
  - -Necator americanus
- Echinococcus granulosus
- Eggs of Paragonimus

- Cryptosporidium parvum
- Trichomonas tenax
- Entamoeba histolytica[17]

Note-Micro-organism may be carried by migrating larvae from the intestine to other tissues. [13]

Symptoms due to Adult parasite-

Clinical manifestations due to adult worm vary from asymptomatic infection to severe and even fatal consequences.

I. **Asymptomatic Infection:** Generally seen in mildly infected case; however, it is not unusual to find children apparently unaffected in spite of heavy infestation with the worms.

II. **The pathological effects:** when present, are caused by **spoliative action, toxic action, mechanical effects, and wandering effects.**

- **The spoliative or nutritional effects-** are usually seen when the worm burden is heavy. The worms may be present in enormous number, sometimes exceeding 500, in small intestinal tract, occupying a large part of the intestinal tract. This interferes with proper digestion and absorption of food. Ascariasis may contribute to **protein-energy malnutrition** and **vitamin A deficiency.**
- **The toxic effects-** are due to hypersensitivity to the worm antigens and may be manifested as fever, urticaria, angionurotic oedema, wheezing and conjunctivitis.
- **The mechanical effects-** are the most important manifestations of ascariasis. The adult worms live in the upper part of the small intestine. Where they maintain their position due to their body muscle tone, spanning the lumen.
- Severe colicky pain in the abdomen.
- The worms may be clumped together into a mass, filling the lumen, leading to volvulus, intussusceptions, or intestinal obstruction and intestinal perforation.

Ectopic ascariasis (Wanderlust): The worms are restless wanders, the wandering is enhanced when the host is ill particularly when febrile with temperature above 39^0 C, acute biliary obstruction or pancreatitis. [17]

According to C.G RAUG (The disease of Children)

The ascaris lumbricoides is to be suspected when there are symptoms-

- Attacks of colicky pains.
- Intestinal catarrh with loose stools or mucus in the faces.
- Nausea and vomiting not due to disordered stomach.
- Irregular appetite.
- Pale countenance with dark circles under the eyes.
- Dilated pupils.
- Itching of the nose.
- Gritting of the teeth.
- Restless sleep with starting and atypical febrile disturbances.

All of these symptoms are discovered in worm infestation

According to SWAYANADAN K. R

Symptoms Either one or more of the following symptoms may be present in children troubled with roundworms:

- A Grade of worm fever and convulsion.
- Pale and leaden colour of the face, occasionally flushed with fever.
- Involuntary twitching of muscles of the face and jerking of the hands and arms.
- Bluish steak under the eyes.
- Pupils dilated or contracted.
- Eyes half- opened during sleep.
- Puffiness of eyelids in the morning and dark circles under the eyes.
- Itching in the nostrils.
- Picking at the nose.

- Offensive breath.
- Grinding of the teeth.
- Inclination to lie in the stomach.
- Ravenous hunger or lack of appetite.
- Abdomen swollen and hard.
- Pain in the vicinity of the umbilicus.
- Wants food, but, when taken into the mouth sensation of nausea.
- Presence of dyspeptic symptoms often.
- Disturbed sleep, starting up suddenly with screams as if frightened.
- Ticking cough which induces vomiting.
- Ticking cough and motion of the lips as if swallowing something.
- Offensive diarrhoea.
- Alternation of diarrhoea and constipation.
- Offensive diarrhoea mostly between 3 and 5 at night.
- Passing of roundworms during stool.
- Incontinence of urine.
- Wetting the bed at night.
- Sediment as that of arrow-robot in the place where urinated.[20]

9. Complications

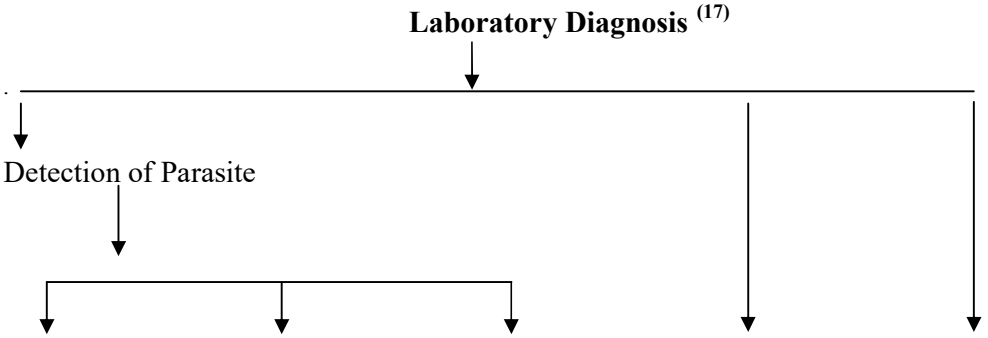
- Roundworms may wander into the nose and frontal sinuses.
- If they reach the appendix they can cause appendicitis.
- If they obstruct the bile duct or the pancreatic duct, they can cause jaundice.
- The migration of larvae in lungs causes inflammation in the lungs as a result of which cough and bloodstained sputum are seen. Such sputum sometimes contains larvae.
- In certain cases, after getting the eye surgically removed for inflammation, the sections have revealed roundworm larva.

- Inflammation of the brain has been occasionally reported due to the migration of roundworm larvae in the brain.
- Roundworms may sometimes come out trough the body wall usually at the umbilicus in children.
- Obstruction in the passage of the intestine due to a large number of roundworm entangled and forming a mass with serious consequences may also result.[20]

10. Differential Diagnosis

The imaging appearance of the adult *Ascaris* in either the gastrointestinal or biliary tract is so characteristic that it should not be confused with any other parasite or entity. The pulmonary infiltrates produced by the larval phase of the worm are non-specific and will be easily confused with pneumonia of any other etiology.[19]

11. Laboratory Diagnosis of Ascaris Lumbricoides



Eggs	Larva	Adult worm		
• Definitive diagnosis of ascariasis is made by demonstration of eggs in faeces. • Rarely, when the infestation is light, eggs are demonstrable only by concentration method.	In the early stage of infection, when migrating larva cause loffer's syndrome, the diagnosis may be made by demonstrating the larvae in sputum, or in gastric washings	• Can occasionally be seen by naked eye in stool or sputum of patient. • X-ray, barium meals and ultrasound imaging may help in diagnosis.	**Serodiagnosis** Ascaris antibodies can be detected by • ELISA • IHA • IFA Serodiagnosis like Loeffer's syndrome	**Blood examination** Eosinophilia may seen in early stages of infection.

Laboratory Diagnosis

The diagnosis of ascariasis depends on the identification of the adult worms passed through the rectum or from some other body orifice, or by identifying the eggs of *A. lumbricoides* in the stool, vomits, sputum, or small bowel aspirate. Occasionally eggs, larvae, or adult worms may be identified in tissue sections. The radiological appearance of the worms in the gastrointestinal or biliary tracts is highly characteristic. Diagnosis during the stage of larval migration is difficult, although occasionally larvae may be found in the sputum or gastric contents. Once the fertile females within the gut begin to release eggs, the diagnosis of ascariasis can usually be made by direct faecal smears. However, concentration techniques using centrifugation (eg, formalin-ethyl acetate method) may facilitate diagnosis.

An increased number of circulating eosinophils is often present but less marked than in other parasitic infections in which migrating larvae or eggs deposited in body tissues remain alive for a long period of time. The eosinophil count is highest during the stage of larval migration, about the time the pulmonary symptoms begin to subside. At this stage, an eosinophilia of 30% to 50% may be present for a short period. However, when mature worms develop (intestinal ascariasis), eosinophilia usually ranges between 5% and 12% and rarely above 25%.

There are several serologic tests which can detect antibodies to *Ascaris*, but as yet there is no specific immunodiagnostic test, since antibodies to *Ascaris* often cross-react with antigens from other helminths. Serology is therefore not often used because of cross-reactivity.

12. Treatment

Drugs which are known to have specific action on ascaris include the following: pyrantel pamoate (a single dose of 10mg/kg, maximum 1 gm), thiabendazole and mebendazole (100 mg twice daily for three days) albendazole (a single dose of 400mg). [13]

The World Health Assembly, together with endemic countries, donors and drug-donating pharmaceutical companies, have set ambitious goals for the control of STH-related morbidity by 2020, aiming to treat at least 75 % of school-age children and high-risk groups, with mass drug administration (MDA) of albendazole or mebendazol.[21]

13. Prevention

The measures should consist of –

I. Proper disposal of human faeces.
II. Treatment of parasitized individuals.
III. Education of children in schools on sanitary laws and hygiene.
IV. It's possible to prevent ascariasis by avoiding contaminated food and water sources.
V. By good hygiene and eating only cooked hot food while traveling.
VI. **Some personal hygiene advice to child as well as mother to protects against parasitic disease**

The human body can provide places for disease-causing parasites to grow and multiply. These places include the skin and in and around the openings to the body. It is less likely that parasites will get inside the body if people have good personal hygiene habits.

Good personal hygiene habits include:

- Washing the body often. If possible, everybody should have a shower or a bath every day. However, there may be times when this is not possible, for example, when people are out camping or there is a shortage of water.
- If this happens, a swim or a wash all over the body with a wet sponge or cloth will do.
- Cleaning the teeth at least once a day. Brushing the teeth after each meal is the best way of making sure that gum disease and tooth decay are avoided. It is very important to clean teeth after breakfast and immediately before going to bed.
- Washing the hair with soap or shampoo at least once a week.
- Washing hands with soap after going to the toilet.
- Washing hands with soap before preparing and/or eating food. During normal daily activities, such as working and playing, disease causing germs may get onto the hands and under the nails. If the germs are not washed off before preparing food or eating, they may get onto the food.
- Changing into clean clothes. Dirty clothes should be washed with laundry soap before wearing them again.

- Hanging clothes in the sun to dry. The sun's rays will kill some disease-causing germs and parasites.
- Turning away from other people and covering the nose and mouth with a tissue or the hand when coughing or sneezing. If this is not done, droplets of liquid containing germs from the nose and mouth will be spread in the air and other people can breathe them in, or the droplets can get onto food.

Fig. 2.7 cleaning teeth helps keep gums and teeth healthy.

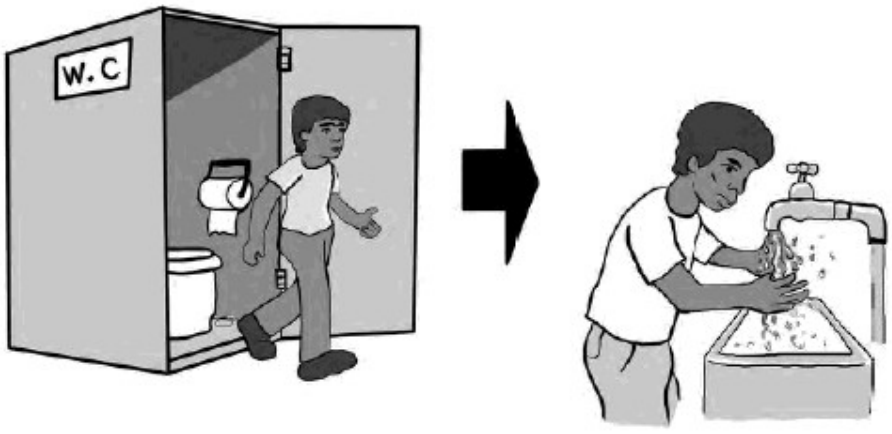


Fig. 2.8: Washing hands after going to the toilet helps stop the spread of disease.

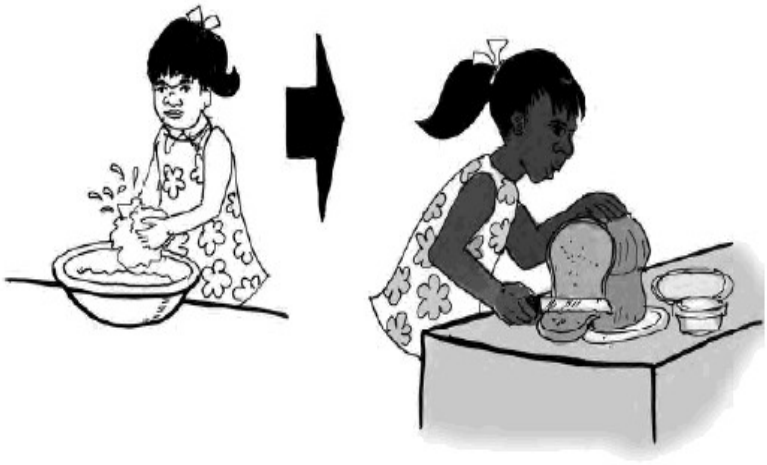


Fig. 2.9: Washing hands before preparing food helps keep away from disease

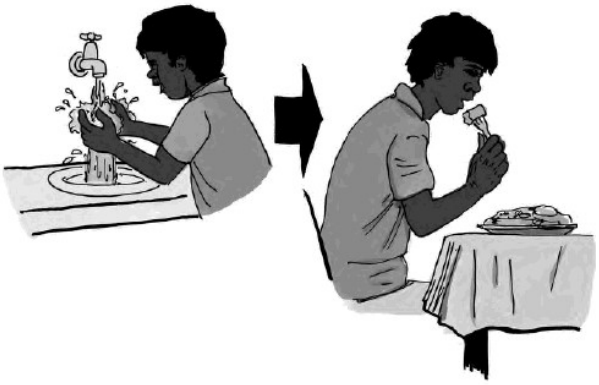


Fig. 2.10: Washing hands before eating food helps stop diseases getting into our bodies

Fig. 2.11: Covering the nose and mouth when sneezing helps stop the spread of diseases

2.3 HOMOEOPATHIC VIEW

According to Farrington -Homoeopathy is system of therapeutics based upon the Law of Similar as expressed by the maxim "Similia Similibus Curentur" - let likes be cured by likes. When a patient presents a group of symptoms similar to those produced by the administration of certain medicine to a healthy human, that medicine is homoeopathically indicated and if prescribed in correct dosage will relieve or cure.[22]

Similarly, for therapeutic purposes Hahnemann wanted to study the clinical symptoms produced by drugs when they are proved on healthy human being.

This aspect of knowledge of the drugs is relevant for the application of drugs to diseased condition for the purpose of cure. [23]

According to H.A. Robort- Homoeopathy treats the sick individual; it is therefore a specialty.

In spite of the trend toward group practice, group thinking and even group mode of life as seen all about us to-day, we have yet to be convinced that the man is not greater than the mass and that as long as intelligent thinking people realize and prize their individuality, the individual approach will hold an appeal to them.

Therefore, homoeopathy offers a special inducement to the man who can teach people to think and act as individuals, and to demand medical treatment as individuals.

- Homoeopathy considers the man as a whole, not just his individual parts. Therefore, primarily homoeopathy has less appeal for the man of mechanical bent, for it is this man who makes the best surgeon.
- Instead, homoeopathy offers a gentler way toward health of the entire individual.
- One thing the student must consider is the differentiation between medicine and public health service. Public health service, ideally, has to do with the prevention of disease in the community, in guarding food and water supplies, in providing facilities and restrictions for adequate healthy housing conditions and in attending to the proper disposal of waste matter, so that the health of the community will be guarded against epidemics borne by impure water, milk.[24]

TOTALITY OF THE SYMPTOMS

In Aphorism-7, Dr. Hahnemann described totality of symptoms. Totality as "outwardly reflected picture of the internal essence of the disease, that is, of the affection of the vital force. [23]

According to Stuart Close-

Dr. Stuart Close further elaborates this concept and has presented it with more clarity. Totality is the true and only basis for every homoeopathic prescription

Totality of the Symptoms.-"Totality of the Symptoms" is an expression peculiar to homoeopathy which requires special attention. It is highly important to understand exactly what it means and involves, because the totality of the symptoms is the true and only basis for every homoeopathic prescription.

Hahnemann (Org., Par. 6) says:-"The ensemble or totality of these available signs or symptoms, represents in its full extent the disease itself; that is, they constitute the true and only form of which the mind is capable of conceiving." The expression has a two-fold meaning. It represents the disease and it also represents the remedy, as language represents thought.

The Totality of the Symptoms means, first, the totality of each individual symptom. A single symptom is more than a single fact; it is a fact, with its history, its origin, its location, its progress or direction, and its conditions.

Every complete symptom has three essential elements: - Location, Sensation and Modality.

- By location is meant the part, organ, tissue or function of body or mind in which the symptom appears.
- By sensation is meant the impression, or consciousness of an impression upon the central system through the medium of the sensory or afferent nerves, or through one of the organs of senses; a feeling, or state of consciousness produced by an external stimulus, or by some change in the internal state of the body. A sensation may also be a purely mental or physical reaction, such as fright, fear, anger, grief or jealousy.

- By modality we refer to the circumstances and conditions that affect or modify a symptom, of which the conditions of aggravation and amelioration are the most important.

  The Totality of the Symptoms means all the symptoms of the case which are capable of being logically combined into a harmonious and consistent whole, having formed, coherency and individuality. Technically, the totality is more (and may be less) than the mere numerical totality of the symptoms. It includes the "concomitance" or form in which symptoms are grouped.

  The "totality" is not; therefore, a mere haphazard, fortuitous jumble of symptoms thrown together without rhyme or reason, any more than a similar haphazard collection of pathogenetic symptoms in a proving constitutes Materia Medica.

  The Totality means the sum of the aggregate of the symptoms: Not merely the numerical aggregate-the entire number of the symptoms as particulars or single symptoms-but their sum total, their organic whole as individuality. As a machine set up complete and in perfect working order is more than a numerical aggregate of its single dissociated parts, so the Totality is more than the mere aggregate of its constituent symptoms. It is the numerical aggregate plus the idea or plan which unites them in a special manner to give them its characteristic form. As the parts of a machine cannot be thrown together in any haphazard manner, but each part must be fitted to each other part in a certain definite relation according to the preconceived plan or design-"assembled," as the mechanics say-so the symptoms of a case must be "assembled" in such a manner that they constitute an identity, an individuality, which may be seen and recognized as we recognize the personality of a friend. [25]

Disease According to Hahnemann Disease is a condition of suffering of living organism; suffering is manifested in and through a sum total of perceptible symptoms. [23]

Classification of disease Aphorism 72, the diseases to which man is liable are either rapid morbid processes of the abnormally deranged vital force, which have a tendency to finish their course more or less quickly, but always in a moderate time - these, are termed

(i) **Acute diseases**; - or they are diseases of such a character that, with small, often imperceptible beginnings, dynamically derange the living organism, each in its

own peculiar manner, and cause it gradually to deviate from the healthy condition, in such a way that the automatic life energy, called vital force, whose office is to preserve the health, only opposes to them at the commencement and during their progress imperfect, unsuitable, useless resistance, but is unable of itself to extinguish them, but must helplessly suffer (them to spread and) itself to be ever more and more abnormally deranged, until at length the organism is destroyed; these are termed

(ii) **Chronic diseases**. They are caused by infection with a chronic miasm.[26]

According to M.L. Tyler All chronic Diseases originate and are based on fixed chronic miasms, which enable their parasitical ramifications to spread through the human organism, and to grow without end."

"The chronic miasms are semi-vital morbid miasms of a parasitical nature, which can only be neutralised and annihilated by a more powerful remedy producing analogous effects. [27]

MIASMATIC VIEW

Dr. Hahnemann described this theory of Miasms in his book 'The Chronic disease' which was published in 1828. The three miasms (Psora, Syphilis and Sycosis) given in that work are held to be responsible for all diseases of a chronic nature and to form the foundation or basis for all disease in general. According to Dr. Samuel Hahnemann, the father of Homoeopathy, they (miasm) are an "infectious principle".

Dr. Hahnemann says that "the chronic diseases which spring from miasms cannot be healed unaided, nor can real health be restored by vital force alone". They could not be properly called illness but rather dyscrasia or diathesis states which conditioned the birth of the illness or the syndromes.

Miasm is an invisible, inimical, dynamic principle, which permeates into the system of a living creature, creating a groove or stigma in the constitution and which can only be eradicated by a suitable antimiasmatic treatment.

Miasms are the constitutional or diathesis states, which determine the modes of existence of the individual. It can be seen as the predisposition towards various chronic diseases. With this understanding of the miasm, we can easily see that it corresponds to the 'constitutional or hereditary influence' of the disease.

According to Dr. Hahnemann, there are 3 causes of diseases, psora, syphilis and sycosis. In any given patient, there could be the influence of one miasm, or any combination of them. An accurate miasmatic diagnosis depends on individual symptoms of the patient.

Latent Psora

Symptoms of Latent Psora. Mostly with Children: frequent discharge of ascarides and other worms; insufferable itching caused by the latter in the rectum. The abdomen often distended. Now insatiable hunger, then again want of appetite. Paleness of the face and relaxation of the muscles. Frequent inflammations of the eyes. Swellings of the cervical glands (scrofula). Perspiration on the head, in the evening after going to sleep. [28]

Miasmatic analysis of worm infestation

Symptoms of worm	Psora	Syphilis	Sycotic
Subject	**Lean and thin with poor sanitation.**	**This subject are unhealthy with itching of nose abd anus.**	**The subjects are short heighted and flabby with over growth like warts.**
Gastric symptoms	**Diarrhoea, or constipation with emaciated look**	**Diarrhoea, tenesmus, gastric ulcer with dysentery.**	**Diarrhoea is found instead of constipation.**
Modalities	**<Heat**	**<Evening**	**>Abnormal discharge**

TABLE 2.4

COMMENTS OF VARIOUS HOMOEOATHIC STALWART ON WORMS

According to Dr. Hahnemann few worms are not to be considered as an important disease as it is common in childhood (where psora is still latent) but when worms are generated in large quantity they depend on morbid condition of the system which must be cured by simple reiterated expulsion nothing is gained. [29]

There is much diversity of opinion even among the qualified and eminent doctors in the treatment of roundworms. Some practitioners advise to administer Vermifuges to kill the worms and cause them to be thrown off while other argues against this.

Dr. I.D. Johnson's 'A Guide to homeopathic practice says: "how many children have been sacrificed by the violent remedies employed to destroy and expel worms, we shall never know; but a moment's reflection ought to convince those of common understanding, hat a drug sufficiently powerful to grind to pieces and expel from the system living parasites, would necessarily excite inflammation in delicate structure into which it passes, and seriously endanger the life of the tender patient. And then, expelling the worms will not prevent their further development, nor will their expulsion cure the disease upon which they depend.

In 'Diseases of Children' Dr. Fisher advocates: "It is well to administer Vermifuges, followed by active purgation, with the thought of killing the parasites outright and causing them to be thrown off, or by constitutional treatment extending over a period of time with the thought of improving the condition of health of the alimentary tract, thus rendering it unsuited as a habitat."

In the author's opinion, when the patient is found to be infested with a number of roundworms the constitutional treatment is not advisable. In such cases it is undoubtedly a good method to administer Vermifuges but the Vermifuges should be a mild one. [20]

HOW HOMOEOPATHY WORK ON DYNAMIC PLAN

According to Hahnemann, Our vital force, as a spirit-like dynamics, cannot be attacked and affected by injurious influences on the healthy organism caused by the external inimical forces that disturb the harmonious play of life, otherwise than in a spirit-like (dynamic) way, and in like manner, all such morbid derangements (diseases) cannot be removed from it by the physician in any other way than by the spirit-like (dynamic, virtual) alterative powers of the serviceable medicines acting upon our spirit-like vital force, which perceives them through the medium of the sentient faculty of the nerves everywhere present in the organism, so that it is only by their dynamic action on the vital force that remedies are able to re-establish and do actually re-establish health and vital harmony, after the changes in the health of the patient cognizable by our senses (the totality of the symptoms) have revealed the disease to the carefully observing and investigating physician as fully as was requisite in order to enable him to cure it.[26]

Homoeopathic Medicine

Following Medicines are prescribed in the study.

- **Abrotanum**
- **Antimonium tartaricum**
- **Brayta muriatica**
- **Calcaria carbonica**
- **Chamomilla**
- **Cina maritima**
- **Iodium**
- **Natrium phoshoricum**
- **Sabadilla**
- **Santoninum**
- **Sepia officinalis**
- **Silicea terra**
- **Spigelia anthelmia**
- **Stannum metallicum**
- **staphisagria**
- **Stramonium**
- **Sulphur**
- **Teucrium marum verum**

1) Abrotanum

According to Dr. W. Boerick

A very useful remedy in marasmus, especially of lower extremities only, yet with good appetite.

Stomach

Slimy taste.

Appetite good, but emaciation progresses.

Food passes undigested.

Pain in stomach; worse at night; cutting, gnawing pain.

Stomach feels as if swimming in water; feels cold.

Gnawing hunger and whining.

Indigestion, with vomiting of large quantities of offensive fluid.

Abdomen

Hard lumps in abdomen.

Distended.

Alternate diarrhoea and constipation.

Frequent urging; bloody stools; worse as rheumatic pains abate.

Ascarides.

Oozing from umbilicus.

Sensation as if bowels were sinking down. [30]

2) Antimonium tartaricum

According to Dr. W. Boerick

Clinically, its therapeutic application has been confined largely to the treatment of respiratory diseases, rattling of mucus with little expectoration has been a guiding symptom.

There is much drowsiness, debility and sweat characteristic of the drug, which group should always be more or less present, when the drug is prescribed.

Gastric affections of drunkards and gouty subjects.

Sensation of coldness in blood-vessels. Antimonium tart is homoeopathic to dysuria, strangury, haematuria, salbuminuria, catarrh of bladder and urethra, burning in rectum, bloody mucous stools, etc.

Antimon. tart. acts indirectly on the parasites by stimulating the oxidizing action of the protective substance.

Chills and contractures and pain in muscles.

Trembling of whole body, great prostration and faintness. [30]

3) Baryta muriatica

According to E.A. Ferrington comparative MM Worm affections: foetid breath, pain in region of navel, worse in the morning: great appetite, bloated abdomen, chronic painless diarrhoea, yellow slimy stools, vomiting, exhaustion and periodical attacks of convulsions.[22]

4) Calcarea carbonica

According to Lilienthal Headache, dark rings around the eyes, pale, bloated face thirst, thick, bloated belly, aching about the navel, diarrhoea, easy perspiration from motion; scrofulosis, tapeworm after Graph, ascarides, with hard stool; crawling in rectum, as from worms; itching at anus, as from pinworms.(31)

Williams D Gentry mentions that itching commencing towards bed-time and troubling for hours, pricking and crawling in rectum, as of pin worms.(32)

According to Dr. W.Boerick This great Hahnemann an anti-psoric is a constitutional remedy par excellence.

Its chief action is cantered in the vegetative sphere, impaired nutrition being the keynote of its action, the glands, skin, and bones, being instrumental in the changes wrought.

Increased local and general perspiration, swelling of glands, scrofulous and rachitic conditions generally offer numerous opportunities for the exhibition of Calcarea.

It covers the tickling cough, fleeting chest pains, nausea, acidity and dislike of fat.

Persons of scrofulous type, who take cold easily, with increased mucous secretions, children who grow fat, are large-bellied, with large head, pale skin, chalky look, the so-called leuco-phlegmatic temperament; affections caused by working in water.

Great sensitiveness to cold; partial sweats.

Children crave eggs and eat dirt and other indigestible things; are prone to diarrhoea.

Calcarea patient is fat, fair, flabby and perspiring and cold, damp and sour.(30)

5) Chamomilla

Persons, especially children, with light-brown hair, nervous, excitable temperament; oversensitive from use or abuse of coffee or narcotics. Children, new-born and during period of dentition.

Child exceedingly irritable, fretful; quiet only when carried; impatient, wants this or that and becomes angry when refused, or when offered, petulantly rejects it "too ugly to live"; cross, spiteful.

Piteous moaning of child because he cannot have what he wants; whining restlessness.

Patient cannot endure any one near him; is cross, cannot bear to be spoken to: averse to talking, answers peevishly.

Complaint from anger, especially chill and fever.

Pain: seems unendurable, drives to despair; < by heat; < evening before midnight; with heat, thirst and fainting with numbness of affected part; eructation's <.

Diarrhoea: from cold, anger or chagrin; during dentition; after tobacco; in child-bed from downward motion.

Stool green, watery, corroding, like chopped eggs and spinach; hot, very offensive, like rotten eggs.

6) Cina maritime

According to E.A. Ferrington comparative MM Most powerful for the elimination of round Worms. The sickly appearance of the face, the blue rings about the eyes and the grinding of the teeth, rubbing of the nose, associated with canine hunger and itching of anus is the perfect picture of Cina.

(For the oxyuris which appear about the anus and get into the rectum or vagina producing irritation Cina is of no avail).

Restless sleep with rolling of eyes, squinting, face pale and cold or red and hot, loathing of food or great hunger; nausea, vomiting; pain in the umbilical region: abdomen hard and distended; constipation; urine turbid when passed and turns milky after standing; frequent sudden attacks of very high fever with convulsions and twitching and contortions of limbs: vomiting of lumbrici and ascarides.[22]

According to Dr. W. Boerick

This is a children's remedy, -big, fat, rosy, scrofulous, corresponding to many conditions that may be referred to intestinal irritation, such as worms and accompanying complaints.

An irritability of temper, variable appetite, grinding of teeth, and even convulsions, with screams and violent jerking of the hands and feet, are all within its range of action.

The Cina patient is hungry, cross, ugly, and wants to be rocked.

Pain in shocks.

Skin sensitive to touch.[30]

According to N.M.Choudhary Cina is inferior the none in marasmus but the itching of the anus, the wetting of the bed, and presence of worms in the stools, the beastly temper, the constant picking of the nose and a strong desire on the part of the child to be constantly rocked are guiding indications.

Dr. E. B. Nash, MD., in his "Leaders in Homeopath Therapeutic" says: "s Here is a truly unique remedy that none but the Homoeopathist knows how to use. But Cina is not always the remedy for worms. But perhaps the oftenest indicated remedy for complaints arising from lumbricoides, or children infested with the animal. Another thing I have proven to my entire satisfaction and that is that it is more efficacious for these cases in the 200th or highest potencies in all alkaloid or lower potencies."

Form the above it is vivid that Dr. E.B. Nash recommends Cina in high potency. But I have proven to may complete satisfaction that Cina3x is efficacious of attack of worms. In a case of worms, especially with symptoms of Cina, a grain of cotton soaked in Cina, a grain of cotton soaked in Cina applied to the nostril of the patient to smell is found very beneficial. But the internal medication is quite necessary.[33]

7) Iodium

According to Dr. W.Boerick

Rapid metabolism: Loss of flesh great appetite.

Hungry with much thirst.

Better after eating.

Great debility, the slightest effort induces perspiration.

Iodium individual is exceedingly thin, dark complexioned, with enlarged lymphatic glands, has voracious appetite but gets thin.

Tubercular type.

Iodine craves cold air.

Abnormal vaso-constriction, capillary congestion followed by oedema, ecchymosed, haemorrhages, and nutritive disturbances are the pathological conditions at the basis of its symptomatology.

Sluggish vital reaction, hence chronicity in many of its aspects.

Iodine is warm, and wants cool surroundings.

Weakness and loss of breathe going upstairs.

Stomach Throbbing at pit of stomach.

Ravenous hunger and much thirst.

Empty eructation’s, as if every particle of food were turned into gas.

Anxious and worried if he does not eat.

Loss flesh, yet hungry and eating well.[30]

8) Natrium phosphoricum

Natrium phosphoricum is the remedy for conditions arising from excess of lactic acid, often resulting from too much sugar.

Ailments, with excess of acidity.

Sour eructation's and taste.

Sour vomiting.

Yellow, creamy coating at the back of the roof of mouth and tongue.

Inflammation of any part of the throat, with sensation of a lump in throat.

Flatulence, with sour risings**.**

Colic, with symptoms of worms. [30]

9) Sabadilla

According to J T Kent "Morbid hunger or loathing for food."A routine remedy in pin worms, seat worms, all sorts of worms; stomach and tape worms.

A careful prescriber never thinks of prescribing for worms.

Sabadilla are well adapted to cases in which pin worms are present.

Often a remedy restores the patient to order in general and then all his particular parts are set in order.

Female sexual organs.

Nymphomania from ascarides.[33]

10) Santoninum

Dr. W. Boerick mentions in his homoeopathic material medica that santonium is of unquestioned values in the treatment of worm disease, as gastro-intestinal irritation, itching of nose, restless sleep, twitching of muscles. It acts on ascaris and thread worms but not tape worms. [30]

N.M.Choudhary mentions that santoninum is active principles obtained from plant called Levant worm seed or cina. It is powerful parasiticide , 2 or 3 grains of the first and

second trituration in a spoonful of sweetened milk in empty stomach is sure to kill all intestinal worms.

Ascarides are usually promptly expelled by the administration of Santonin. This is best given in the first decimal trituration, a two- to five-grain powder, according to the age of the child, three times daily, followed, on the morning of the third day, by a laxative, if necessary.[18]

11) Sepia

According to J T KENT In Sepia there is much offensiveness; the odour of the stool is unusual, loose stools horribly offensive, foetid; the sweat is foetid, the urine is foetid.

"The stool has a putrid, Souris, foetid smell, expelled suddenly and the whole of it at once."

Sepia is given in a routine way for constipation, when there are few symptoms.

There is always a sense of fullness in the rectum after stool; ineffectual straining and sweating in the effort because the patient is weak and exhausted.

Sepia has the ineffectual urging like Nux.

She may go for days with no urging and then the effort is as if she were in labor.

Prolepses of the rectum.

Weight as of a ball in the anus not relieved by stool.

Soreness of the anus.

Expulsion of ascarides.

Oozing moisture from the rectum, soreness between the buttock. [33]

12) Silicea terra

According to lilienthal Enuresis nocturnal, especially in children suffering from worms or chorea; weakness of urinary organs and constant desire to urinate[31].

13) Spigelia anthelmia

Used for Worms when there are strabismus from abdominal irritation, jerking over eyes, paleness of face and blue rings around eyes.

The patient feels faint and nauseated on awaking in the morning, relieved by eating breakfast.

There is colic, worse about the navel, and the stool consists of mucus, faeces and Worms.[22]

14) Stannum metallicum

According to Hahnemann, Stannum so stupefies the tape and round Worms that they are easily dislodged by purgatives.

It is also used for epileptic form convulsions from Worms.

The patient has a pale face and dark rings around the eyes and colic which is relieved by hard pressure.[22]

The breath is foul and the tongue is heavily coated. There is revenue appetite, with nausea after eating. Moaning and restless at night. Pale face and object fear. The patient prefers to lie on its stomach to relieve the abdominal suffering, is dull and stupid with pale face and sunken eyes. Cina is better suited for the high nerve tension of wormy affections while Stannum is situated for sluggishness of disposition, general torpor, fetor of breath flatus and passive and fever.[20]

15) Staphisagria

Stomach

Flabby and weak.

Desire for stimulants.

Stomach feels relaxed.

Craving for tobacco.

Canine hunger, even when stomach is full.

Nausea after abdominal operations.

Abdomen

Colic after anger.

Hot flatus.

Swollen abdomen in children, with much flatus.

Colic, with pelvic tenesmus.

Severe pain following an abdominal operation.

Incarcerated flatus.

Diarrhoea after drinking cold water, with tenesmus.

Constipation, haemorrhoids, with enlarged prostate[30].

16) Stramonium

Desires light and company; cannot bear to be alone worse in the dark and solitude; cannot walk in a dark room.

Awakens with a shrinking look, as if afraid of the first object seen.

Imagines all sorts of things; that she is double, lying cross- wise, etc.

Head feels as if scattered about.

Pupils dilate when child is reprimanded.

Face hot and red with cold hands and feet; circumscribed redness of cheeks, blood rushes to face.

Vomiting: as soon as he raises head from pillow; from a bright light.

Convulsions: with consciousness; renewed by sight of bright light, of mirror or water.

Twitching of single muscles or groups of muscles, especially upper part of body; chorea.

Hydrophobia: fear of water, with excessive aversion to liquids; spasmodic constriction of throat.

No pain with most complaints; painlessness is characteristic.

17) Sulphur

According to Lilienthal Worm colic, with constipation or difficult stool, yellow hands, blue nails, or with reddish, bloody stools; flatulence, much rumbling.[31]

Tongue white, with red tip and red border. Complete loss of appetite, constipation, with frequent unsuccessful desire for stool. Painless morning diarrhoea hardly is getting time to get out of bed. Gets very hungry about 11 A. M Sinking feeling in stomach before food. Nausea and vomiting when stomach is empty. Frequent passage of roundworms, hookworms and tread-worms. Creeping and biting in the rectum. Jerks and twitches during. [20]

18) Teucrium marum verum

Rectum Itching of anus, and constant irritation in the evening in bed. Ascarides, with nightly restlessness**.**

Crawling in rectum after stool. [30]

According to Lilienthal Ascarides: 1, Acon., Bell., Cina, Chin., Dig., Fer.; 2, Asar., Calc., Graph., Ign., Mar., Merc., Nux v., Sabad., Spig., Santon., Stram., Stann., Sil., Val.. Veratr., Sulph.[31]

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