

CLINICAL IMPORTANCE OF SHATKRIYAKALA WITH SPECIAL REFERENCE TO TYPHOID FEVER

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ABSTRACT

Shatkriyakala means the six stages – *Sanchaya*, *Prakopa*, *Prasar*, *Sthanasanshraya*, *Vyakti* and *Bheda*. *Shatakriyakala* is the process of understanding the *samprapti* of disease. Balancing *doshas* at first stage, by applying simple line of treatment can stop the *dosha* to go to next stage in the manifestation of disease. Similarly, if we know the *doshas* in *prasaravashtha* (stage of migration) it can be treated timely by *Samshamana karma* (pacification treatment) from the nearest possible way. Typhoid is an infective disorder caused by *Salmollena typhi* which enters in the body through contaminated food and water, poor hygiene and sanitation. The symptoms like fever, abdominal discomfort, weakness and skin rashes appear after exposure to infection in between 6-30 days. So, the knowledge of pathogenesis and incubation period of typhoid fever in the reference to *Shatkriyakala* will be highly beneficial for early diagnosis as well as prevention of the disease. Early diagnosis helps to cure the diseases successfully without much discomfort. This is an objective approach of ancient *acharyas* to make clinical practice more effective.

Keyword: *Shatkriya kala*, Typhoid.

INTRODUCTION

Ayurveda is the science of human life, which mainly deals with physical, psychological as well as spiritual wellbeing of an individual. The whole universe is under the control of time. *Kriyakala* is one such age old principle described in classical ayurveda treatises. *Shatkriyakala* is predominantly a concept of ayurveda which describes different phase of a disease formation in its own unique way. It refers to six stages for treatment.

संचयं च प्रकोपं च प्रसरं स्थान संश्रयम्।
व्यक्तिं भेदं च यो वेत्ति दोषाणां स भवेद्दिषक्॥¹

They are *Sanchaya*, *Prakopa*, *Prasara*, *Sthanasanshraya*, *Vyakta*, and *Bheda*. In *Sanchaya*, *Prakopa* and *Prasara Kriyakala* mainly *dosas* involved in disease gets vitiated. In these earlier three *kriyakalas* according to vitiation of involved *dosas* patient feels discomfort or disturbance in daily routine and so the patient desire or dislike things which pacifies or aggravates vitiated *dosas* respectively. It is the process

of understanding the pathogenesis of disease in consecutive stages. If accumulated dosa has been eliminated it won't manifest successive stages of *kriyakala*. If not eliminated, it passes to next stages. Early diagnosis of the disease helps to cure the disease successfully without any discomfort in planning treatment. If physician able to detect the changes in early stages like *Sanchaya* (accumulation), *Prakopa* etc. based on the manifestation of *doshas* symptomatology and advises the technique at that stage to prevent further stages, So that disease may not become stronger. Typhoid fever is a systemic disease characterized by fever and abdominal pain caused by dissemination of *Salmonella typhi* or *Salmonella paratyphi*². The disease was initially called typhoid fever because of its clinical similarity of typhus. Typhoid fever was clearly defined pathologically as illness on the basis of its association with enlarged Payer's patches and mesenteric lymph nodes. The term enteric fever was proposed as an alternative designation to distinguish typhoid fever from typhus.³

Aim & Objectives:

To understand the pathogenesis with relation to *Shatkriyakala* for diagnosis & management of Typhoid fever.

Materials and Methods:

Literature search- Review of literature regarding *Shatkriyakala* is collected from *Brihatrayi* and available commentaries on it and research articles are also searched from various websites.

Type of study- Conceptual study

Sanchaya (Accumulation) –

“संहतिरूपा वृद्धिशचयः”⁴

“चयो वृद्धिः स्वधाम्येव प्रद्वेषो वृद्धि हेतुषु , विपरीतगुणेच्छा च”⁵

In stage one, the *dosas* accumulate in its natural seat called as *Sanchaya* & produces dislike for things which causes of increase & liking for the things of opposite qualities⁶. The food or water contaminated by excreta of typhoid patients chronic carriers of typhoid are main source of infection⁷. The orally ingested bacilli invade the small bowel and they multiply intracellular. Incubation period of *Salmonella Typhi* and *Salmonella*

Paratyphi averages 10-14 days but ranges from 3-21 days depending on the inoculum size and the host's health and immune status⁸.

Prakopa (Aggravation) stage –

“विलयन रूपा वृद्धिः प्रकोपः”⁹

“कोपस्तुन्मार्गगामित”¹⁰

In this stage the invasion of bacteria with intestinal lymphoid tissue and proliferation of bacteria. When the number of intracellular bacteria increases on its own seat and acquires the tendency to spread beyond its normal seat. This phase lasts for two weeks¹¹.

Prasara (Dissemination) stage –

Now the bacteria move out of its own seat and begins to circulate in the body. *Salmonella typhi* co-opt the macrophages to cellular machinery for their own reproduction as they carried through the mesenteric lymph nodes to the thoracic duct, the lymphatic and then through to the reticulo-endothelial tissues of the liver, spleen, bone marrow, and lymph nodes. Afterward, the bacteria induce macrophage apoptosis and breaking out into the bloodstream to invade the rest of the body. The bacteria infect the gallbladder via either bacteremia or direct extension of infected bile. The result is that the organism re-enter the gastrointestinal tract in the bile and re-infects Payer patches. Bacteria that do not re-infect the host are typically shed in the stool and available to infect other hosts. The invasion of blood stream causing bacteremia, General toxemia is caused with rise of temperature, malaise, abdominal pain. Immunological reactions occur leading to the next phase in ten days' time^{12, 13}.

Sthanasamsraya (Localization) stage -

“प्रसृतानां पुनर्दोषाणां स्रोतवैगुण्याध्यत्र संज्ञः स स्थानसंश्रयः”¹⁴

Agitated and disturbed *dosa* move all over body and produces *vyadhi* (disease) when favorable environment was developed of *dosa-dusya sammurchana* due to unhealthiness of *srotas* in a particular site resulting into manifestation of disease¹⁵. Localization of bacteria occurs in intestinal lymphoid tissue, mesenteric nodes, gall bladder, liver, spleen, Payer's patches of the small intestine and sometimes the bones¹⁶, and produce prodromal clinical signs. In this stage local necrosis, probably due to antigen-antibody hypersen-

sitivity reactions result in characteristic lesion. The ileum is most affected, but lesion may be found in jejunum and colon like oval Payer's patches become greatly swollen, necrosis occurs with ulcer formation. The ulcers are brownish-black with undermined edges and solitary lymph follicles and mesenteric lymph affected¹⁷.

Vyaktavastha (Manifestation of disease) –

“**व्याधेः प्रव्यक्तं रूपं व्यक्तिः**”¹⁸

In *vyaktavastha*, there is the clear manifestation of the signs and symptoms in typhoid fever like step ladder pyrexia of increase nature, malaise, leucopenia, centrally coated tongue, relative bradycardia, constipation / diarrhoea and hepato-splenomegaly. Pale red blanching, slightly raised macules known as “Rose spots” appear over the chest and abdomen at the end of the first week. Abdominal pain, distension and epistaxis may occur. Signs of meningism, delirium, other complication including coma and death can occur at the end of second week¹⁹.

Bhedavastha (Chronicity) – If the typhoid is untreated or encountered with insufficient *vyadhivighatakara bhavas*, lands in stage of *bhedavastha* in which it affects other systems of the body and leads to formation of *upadrava* (complication)²⁰. Complication of typhoid fever to as under²¹–

General- Toxemia and typhoid state, hyperpyrexia, peripheral circulatory failure, disseminated intravascular coagulation, deep vein thrombosis and thrombophlebitis.

Gastrointestinal - Hemorrhage, perforation, paralytic ileus, peritonitis, parotitis, toxic hepatitis.

CNS – Meningitis, encephalitis, meningovascularitis.

Other Systems - Myocarditis, pyelonephritis, glomerulonephritis, osteomyelitis, arthritis, cholecystitis, bronchitis, pneumonia, orchitis and rarely alopecia.

DISCUSSION

Natural history of typhoid fever and *shatkriyakala* can be correlated with each other. There are six phases of disease progression in natural history of disease like *sanchaya*, *prakopa*, *prasara*, *sthanasanshray*, *vyakti* and *bhedavastha*. In *sanchaya* and *prakopa* stage, patients have no specific signs and symptoms because in

this stage bacilli invade in small bowel and they multiply intracellularly to required tendency to spread out from own seat. As the vitiation of *doshas* takes place after 07 days of *aagantuja karan & prasara* of bacteria starts in this time. Incubation period of salmonella typhi is 8-14 days so *prasara* may start after 08 days. In this time *doshas* does not get vitiated hence symptoms of *sanchaya* and *prakopa*. In *prasara* stage, bacilli spread out own seat and produce bacteremia. Patients have signs and symptoms like rise of temperature due to vitiation of *doshas* markedly *pitta* and decrease in number of circulating white blood cells (leukopenia) occurs with eosinopenia and relative lymphocytosis, Blood cultures and urine cultures obtained during febrile period for salmonella Typhi or *S. paratyphi*. In *sthanasanshray* stage, bacilli invade with gall bladder and Payer's patches of small intestine and produce prodromal signs. Blood cultures are sometime still positive at this stage. In *vyaktavastha*, Typhoid clear appears with signs and symptoms like as rose spots, rise of temperature, headache, malaise, abdominal pain, endocarditis, meningitis etc. Widal and stool culture are strongly positive at this stage. In *bhedavastha*, typhoid appears with chronic sign and symptoms like hemorrhage, intestinal perforation, cholecystitis, splenic infarction etc. This stage blood, urine, widal and stool cultures are found positive.

CONCLUSION

Through natural history of typhoid fever we can correlate with *sanchaya*, *prakop*, *prasara*, *sthanasanshray*, *vyakti*, *bhedavastha* of *shatkriyakala* for diagnosis and treat the typhoid accordingly.

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