

## ROLE OF VIRECHANA IN TYPHOID FEVER – AN OBSERVATIONAL CLINICAL STUDY

Parauh Saurabh<sup>1</sup>, Hullur M.A<sup>2</sup>, A.S. Prashanth<sup>3</sup>

PG Department of Kayachikitsa, Ayurved Mahavidyalaya, Hubali, Karnataka, India

### ABSTRACT

Typhoid fever is an acute illness associated with fever that is most often caused by the *Salmonella typhi* bacteria. Once the bacteria is ingested it quickly multiplies within the *stomach, liver or gall bladder* and finally enters the *blood stream* causing symptoms like *fever, headache* etc. these cases as of 2010 caused about 190000 deaths up from 137000 in 1990 in whole world, India, Pakistan and Egypt are also known high risk area for developing this disease. A clinical study comprising of 15 patients of either sex attending OPD clinic of AMVH Hubli and presenting with clinical manifestation of *Typhoid* confirmed by Widal test were selected for *amapachana* with *Amritottar Kashaya* tablet and *Shaddharan* tablet and *Snehapana* procedure performed by *Indukantaghrita* followed by *Virechanakarma* with *Trivrit leham*. Only 10 patients completed the prescribed 12 days course of treatment. From the result obtained we can conclude that therapy with *Virechana* treatment shown significant relief ( $p < 0.001$ ) in symptoms after 12 days of treatment.

**KEY WORDS:** *Indukantaghrita, Typhoid fever, Trivrita leham, Virechana*

### INTRODUCTION:

Typhoid, also known as enteric fever is a life threatening disease that is caused due to an infection by the bacterium *Salmonella typhi*. According to the CDC (Center for Disease Control) almost 21.5 million people in developing countries contract typhoid each year. The bacterium *Salmonella typhi* is present only in human beings and is transmitted through contaminated food or water. People with this infection carry the bacterium in their intestines and bloodstream, and those who have recovered from the disease could still have the bacterium in their system; they are known as ‘carriers’ of the disease. Both ill

people and carriers shed *Salmonella typhi* in their stool. Infection is usually spread when food or water is handled by a person who is shedding the bacterium or if sewage water leaks into drinking waterfood that is then consumed. Once the bacterium is ingested it quickly multiplies within the stomach, liver or gallbladder and finally enters the blood stream causing symptoms like *fever, rashes (flat, rose-coloured spots), vomiting, loss of appetite, headaches, general fatigue*. In severe cases one may suffer from **intestinal perforations or internal bleeding, diarrhoea or constipation**. One of the characteristic symptoms of ty-

phoid is a 'step ladder fever'. Typhoid fever is treated with antibiotics. Resistance to multiple antibiotics is increasing among *Salmonella* that cause typhoid fever. Reduced susceptibility to *Fluoroquinolones* (e.g., *ciprofloxacin*) and the emergence of multidrug-resistance has complicated treatment of infections. Recently, it has been demonstrated that many human pathogenic bacteria have developed resistance against several synthetic drugs. There are several reports on antimicrobial activity of crude extracts prepared from plants that inhibit various bacterial pathogens, but a limited numbers of *in vitro* studies on herbal preparations have been published. It is need of the hour to identify antibacterial potential of herbal products based on diseases for which no medicine or only palliative therapy is available. Hence an attempt was made to screen the antibacterial potential of herbal preparations in the control and prevention of enteric bacterial infection. The above said Typhoid symptomatology resembles to many of the condition explained in the Ayurveda such as *PittolavanaSannipataja*

*Jwara*<sup>1</sup>, *Vishama Jwara*<sup>2</sup> etc. as many symptoms like *Sirahgshoola*, *Antaradaha* and *Bahirdaha*, *gaurava*, *Sweda*, *Nabhiparshwapeeda*, *Vitsanga*, *Atisara*, *Antragatarak-tastrava*, *gatre cha bindworakte*, are similar to that of Typhoid fever.

**AIMS AND OBJECTIVES:** To explore the role of Panchkarma treatment with *Virechana* for typhoid fever.

**OBJECTIVES:**

1. To study enteric fever / Typhoid fever in modern and Ayurvedic perspective.
2. To understand the effect of *Virechanakarma* in Typhoid Fever.

**MATERIALS AND METHODS:**

- 1) Tablet *amritottara kashaya*<sup>3</sup>
- 2) Tablet *shaddharana*<sup>4</sup>
- 3) *Indukanta ghrita*<sup>5</sup>
- 4) *Trivrita leham*<sup>6</sup>
- 5) *Murchit taila*<sup>7</sup>

**STUDY DESIGN:**

**Sample size:** A minimum of 10 patients diagnosed as Typhoid fever and fulfill the inclusion criteria were selected incidentally and advocated for *virechana* treatment

**TABLE NO 1: Procedure Drug & dose Duration**

<i>Deepana&amp;Pachana</i>	<i>Tab. AmritottaraKashaya 1 BID</i> <i>Tab. Shaddharana 1 BID</i>	3-5 days till nirama laxana seen
<i>Snehapana</i>	<i>Indukantaghrita</i>	3-5 days
<i>Abhyanga&amp;Svedana</i>	<i>Murchitaitaila</i>	1 times a day for 2 day
<i>Abhyanga, Svedana &amp;Virechana Karma</i>	<i>Trivrittaleha with warmwater.</i>	1 day

SansarjanaKrama Diet as per Shuddhi 3-7 days

**Duration:** 15 days

Follow Up: 30 days

**INCLUSION CRITERIA:**

1. Subjects of age between 20 years to 50 year of age of either sex.
2. Subjects having history of fever with mild to moderate degree.

3. Subjects having clinical feature of Typhoid fever.
4. Subjects having Widal test positive.

**EXCLUSION CRITERIA:**

1. Subjects below 20 years and more than 50 years.

2. Subjects having temperature more than 101<sup>0</sup>F.
3. Subjects having fever due other cause with Widal positive.

- TC
- DC

**WITHDRAWAL CRITERIA:**

1. If the patients having clinical feature would aggravated into secondary infection.
2. If the patient is irregular in the decided course of treatment.

**Intervention**

1. *Amapachana*- Tablet *AmritottarKashaya* and Tablet *Shaddharana* 1 BID 3-5 days with warm water till nirama laxana seen.
2. *Snehapana*- *IndukantaGhrita* in *Aa-rohanakrama* at morning starting with 30 ml and increasing 30 ml every successive days for 3-5 days or according to *agnibala* with hot water.
3. *Sarvanga Abhyanga Swedana* for 2 days with *Murhchittaila*.
4. *Virechana* with *Trivritleham* with warm water.

**ASSESSMENT CRITERIA:**

**1. Subjective parameter**

- Headache
- Fever
- Colic pain
- Constipation
- Diarrhea
- Severe Sweating
- All the above symptoms or any of the above symptoms may present.

**2. Objective parameter**

- Widal test positive
- Hb%

**Gradation of Clinical feature**

**1. HEADACHE**

- Severe- 3 (Uncontrolled headache)  
 Moderate- 2 (Occasional headache)  
 Mild- 1 (Can be tolerated without medication)  
 Nil- 0 (No headache)

**2. FEVER**

- High grade -3 (>102° F)  
 Moderate -2 (99.6° F- 102° F)  
 Low grade -1 ( 97.6° F- 99.6°F)  
 Nil -0 ( <97.6° F)

**3. COLIC PAIN**

- Severe- 3 (Continuous)  
 Moderate- 2 (Intermittent)  
 Mild- 1 (Dull ache)  
 Nil- 0 (No pain)

**4. CONSTIPATION**

- Severe- 3 (Passing scanty stool after prolonged straining)  
 Moderate- 2 (Passing stool on straining)  
 Mild- 1 (Occasionally hard stool)  
 Nil- 0 (No constipation)

**5. DIARRHEA**

- Severe-3 (Watery stool passing 4-5 times in a day)  
 Moderate-2 (Watery stool passing 2-3 times in a day)  
 Mild- 1 (Watery stool passing once in a day)  
 Nil-0 ( No watery stool)

**6. WIDAL TEST**

- Ratio-1:320 - 3  
 Ratio- 1:160 - 2  
 Ratio-1:80 - 1  
 Ratio- 1: 40 -0

**TABLE NO 2: STATISTICAL ANALYSIS:**

LAKSHANA	BT	AT	X	%	SD	SE	t	P	REMARK
Headache	2.6	0.6	2	76.9	0.5481	0.1732	11.5	<0.001	HS
Colic pain	2.0	0.3	1.7	85.0	0.806	0.26	6.5	<0.001	HS

Constipation	1.8	0.4	1.4	77.77	0.632	0.2	5	<0.001	HS
Fever	1.3	0.1	1.2	92.30	0.4	0.13	9.2	<0.001	HS
Coated tongue	3.0	0.2	2.8	93.33	0.4	0.13	21.5	<0.001	HS
Widal test	1.9	0.9	1.0	52.63	0.447	0.1414	6.07	<0.001	HS

**OBSERVATION AND RESULTS:** Of the 15 patients registered, 5 patients did not complete because of incompetence of the *Virechana* procedure. Observation for 10 patients who completed therapy were considered for statistical analysis. Maximum patients who enrolled for the study were above 20 year of age.

**HEADACHE:** 10 subjects presented with this symptom the mean value of BT and AT was 2.6 and 0.6 respectively which provide 76.9% relief which is statistically highly significant at  $t=11.5$  and  $p< 0.001$ .

**COLIC PAIN:** 9 subjects presented with this symptom the mean value of BT and AT was 2.0 and 0.3 respectively which provide 85 % relief which is statistically highly significant at  $t=6.5$  and  $p< 0.001$ .

**CONSTIPATION/ DIARRHEA:** 10 subjects presented with this symptom the mean value of BT and AT was 1.8 and 0.4 respectively which provide 77.77 % relief which is statistically highly significant at  $t=5$  and  $p< 0.001$ .

**FEVER:** 10 subjects presented with this symptom/sign the mean value of BT and AT was 1.3 and 0.1 respectively which provide 92.30 % relief which is statistically highly significant at  $t=9.2$  and  $p< 0.001$ .

**COATED TONGUE:** 10 subjects presented with this sign the mean value of BT and AT was 3.0 and 0.2 respectively which provide 93.33 % relief which is statistically highly significant at  $t=21.5$  and  $p< 0.001$ .

**WIDAL TEST:** 10 subjects presented with this test the mean value of BT and AT was 1.9 and 0.9 respectively which provide

52.63 % relief which is statistically highly significant at  $t=6.07$  and  $p< 0.001$ .

### DISCUSSION:

Even during amapachana temperature variations was observed. No other clinical findings were found. The study was done in 10 patients. 3 patients received 3 days *Snehapana* and 7 patients received 5 days *Snehapana*. Quantity of 30 ml of *Snehapana* started for all patients and increased by Aroanakrama. 3 patients shows the *Samyaka Snehapana Lakshan* in 3 days after taking 90 ml of *Sneha* and 7 patients shows the *Samyaka snehapana Lakshana* in 5 days by taking 150 ml of *Snehapana* in 5<sup>th</sup> day by increasing 30 ml per day. The diet given during *Snehapana* was *Laghu* and *Supachya* that is *Manda* and *Ushanabhajana* was advised. *UshnaJala* was advised as anupana during *Snehapana*. Body temperature of patients was variable. 3 patients body temperature was increased by 1° F, 5 patients body temperature was decreased by 2° F and 2 patients body temperature was decreased by 1° F during *Snehapana*. The symptoms like colic pain and constipation was slightly relieved by some extent during *Snehapana*. No complications were observed during *Snehapana*.

On the basis of the results of this study it may be concluded that *Virechana* treatment for *Typhoid* with *Amapachana* is very effective and highly significant in reducing the symptoms (subjective parameters) and also in reducing the biochemical parameter and other objective parameters. Since results appear promising a detailed

multi centric study with higher patient base recommended furthering confirming the benefits of *Virechana* procedure. *Pootikaranja, Devdaru, Dashmoolakashaya, and Ksheersiddha Grita* is called as *Indukantagrita*. This *Ghrta* is useful in *Vataroga, Kshayaroga, Mahaudararoga, Gulma, Shoola, Vishamajwara* and it is *Balya*. *Shatpalakalka (Pippali, Pippalimoola, Chavya, Chitraka, Shunti and Saindhava)* is added. Hence it is more *Deepana, Pachana and Srotoshodhaka*.

### CONCLUSION

- After sustained theory and systematic clinical work following conclusions are drawn.
- Typhoid, a commonly seen condition, has been explained in our classics under different headings.
- The incidence of Typhoid is found to be more in people taking food from outside.
- Majority of hypertensive patients had Headache, Fever, colic pain, constipation/diarrhea, Sweating as common complaints.
- It can be said with full confidence that Typhoid can efficiently and effectively be managed with classical virechana along with the life style modification, habits and food habits in accordance with the principles told in Ayurveda and the complications be prevented.

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### Dr. Saurabh Parauh

PG Department of Kayachikitsa,  
Ayurved Mahavidyalaya,  
Hubali, Karnataka, India  
Email: saurabhparauha@gmail.com

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