INTRODUCTION

No medicine even today has been created a goal about the vulnerability of the disease where it causes death explained in the name of Arista lakshnas, which are denoting the importance of medication & caution to the patient to come out of the suffering ailments. Among the countless number of ailments in this world a few can be identified as very common & recurrently affecting. Where Oedema is also one of those. Acharya charaka had classified the sotha into 3 types 1) Sarvanga sotha (Generalized oedema or Anasarca, which may result due to the vikrithi of Hridaya, Yakrit & Vrik-

2) **Ardhanga sotha** is a milder one to the above, when these organs are diseased to some extent only. It is a sotha which occurs in some parts of the body. When **Hridaya** & yakrit are affected the sotha is in lower & middle parts of the body & the upper part of the body is affected when the vrikkas are involved. In these two kinds the general symptoms are more marked than the swelling. 3) **Ekanga sotha** may be due to one dosha or occurring in one area of the body. Hence the sotha can appear anywhere in the body. Oedema is mentioned in modern system of medicine as a symptom rather than a disease. Ayurvedic references have showed it is a disease entity by explaining the following samprapthi. Vata dosha get vitiated & pushes out the increased Rakta, Pitta, & Kapha to exterior (twak) by blocking their channels & produces swelling of skin & muscle (twak, mamsa) it is called utseda samhata, sotha in view of increased size. Sotha can be correlated to oedema in modern science. Oedema is the medical term for excessive fluid accumulation within the interstitial space or within the cavities of the body. Epidemiology; The highest annual incidence of oedema is 24.3/100 000 persons per year in Europe, 6.3/100 000 persons per year in Asia & Middle east. Prevalence; Caused 30% of deaths by the end of the 20th century in most of the developed World. Mortality from oedema had been replaced by mortality from chronic illnesses. Such as heart disease, cancer & stroke. Gender & age; Male & Female ratio is 2:1. Age group of 40 to 59 yrs is more prevalent. International ranking; 2014 ICD-10 CM—N70-N77. International distribution; It spreads all over the world, more in Europe. Causative factors; liver, heart, kidney disorders, nutritional deficiency etc, **OBJECTIVES OF THE STUDY:**

To assess the efficacy of **Vardhamana gudaardraka prayoga** in the management of **sarvanga sotha**

**CLINICAL PLAN:**

All together 5 patients are selected randomly from O.P.D (P.G.K.C) of Dr .B.R.K.R Govt. Ayurvedic college. Hyderabad.

<table>
<thead>
<tr>
<th>Subjective</th>
<th>Objective</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Utsedhana</strong></td>
<td>X -ray</td>
</tr>
<tr>
<td><strong>Ushma</strong></td>
<td>Serum creatinine</td>
</tr>
<tr>
<td><strong>Gouravam</strong></td>
<td>Serum albumin</td>
</tr>
<tr>
<td><strong>Vivarnyam</strong></td>
<td>Plasma albumin</td>
</tr>
<tr>
<td><strong>Chirottana prasamana</strong></td>
<td>Serum electrolytes</td>
</tr>
<tr>
<td><strong>Pitting oedema/No pitting</strong></td>
<td>Blood urea</td>
</tr>
<tr>
<td><strong>Measurement of girth</strong></td>
<td>Hb%</td>
</tr>
</tbody>
</table>

**INCLUSIVE CRITERIA**

- **Utsedhana**
- **Ushma**
- **Gouravam**
- **Vivarnyam**
- **Chirottana prasamana**
- Pitting oedema/No pitting
- Measurement of girth
- Patients with **sarvanga sotha**
- Both the gender
- Any age group
- Duration -1 month
EXCLUSIVE CRITERIA
- Trauma
- Heenabalasya sarvagah
- Krisa
- Sotha at marma stana
- Upadrava yukta

DISEASE REVIEW
SOTHA NIRUKTHI
The word sotha is derived from the root “SAVAGATHOU BAHULAKATH PHA” it means instantly spreading.

NIDHANA
- Kshara, amla, tikta, ushna padhardha sevana
- Ama, mruth, dadhi sevana.
- Gara visha
- Achesta
- Nacha dehasudhi
- Vishama prasudhi
- Mydhyopachara etc.,

SAMPRAPTHI
Samanya Samprapthi of sodha was explained by charaka in chikitsa stana," and vishesha samprapthi was explained in sutra stana.
- Dosha : Vridhakillya, Vata, Pitta, Kapha (Vayana)
- Dushya : Vata, Pitta, Kapha
- Srotas : Vata, Pitta, Kapha
- Mansavaha, Medavaha
- Agni : Rasadhatvagni manjana
- Jalamaahabhavagni mandya
- Udbhava sthana : Bahya sira
- Vyakti Sthana : Twak, Mansa
- Adhishthana : Eka, Sarvaga
- Vyadhimarga : Bahya, Abhyantara.

TYPES;
1) According to the causes. 2) According to location 3) According to Pathogenesis Nija, Agantu Sarvanga, Ekanga Sarvatantra, Paratantra respectively.

SARVANGA SOTHA
Shotha when gets developed all over the body is considered as Sarvanga Shotha. Modern science has described it as Generalized or Systemic Oedema or Swelling. Depending upon its location in the body, i.e. upper, middle and lower part of the body, it can be also classified as is described in Shutrut Samhita as well as in Madhav Nidana.

MODREN VIEW
Oedema results from the accumulation of excess fluid in the interstitial spaces or serious cavities.

CLASSIFICATION
Depending on nature of fluid
- Inflammatory edema (due to increased vascular permeability)
- Non-inflammatory edema (due to osmotic or hydrostatic pressure imbalance)

Depending on site of collection;
Generalized edema
Due to transudation of salt and water, as in example of hypoproteinemic syndrome, congestive cardiac failure, acute glomerular nephritis, nephrotic syndrome, cirrhosis

Localized edema
Due to increased permeability of small blood vessels, e.g., infection, trauma, burns, allergy lymphatic obstruction, e.g. – malignancy, filariasis, chronic infection, venous obstruction, e.g. – thrombosis, malignant infiltration.

Causes of Edema (Mnemonics) -THE LEAK OF VEINS
Tumor, Heart failure, Enteropathy (protein-losing), Liver failure, Endocrine (hypo-thyroidism, aldosterones,diabetes), Altitude sickness, Kidney disease (renal failure, nephrotic syndrome), Obstruction of lymphatics, Filariasis, Venous thrombosis, Ec-
General Principles in the formation of Interstitial Fluid

About 24 litres of fluid are filtered through the capillaries per day. 85% - reabsorbed into the capillaries. 15% - returned to the circulation via lymphatics. The formation of ISF is regulated according to the Starling hypothesis, which incorporates 5 factors –

- capillary hydrostatic pressure,
- interstitial tissue pressure,
- plasma oncotic pressure,
- endothelial permeability and lymphatic function

- Na+ is the most important osmotically active constituent of the ECF. The control of EFC volume ( & the formation of edema) mainly control by the factors that regulate the accumulation of Na+ in the body and excretion of Na+ by the kidneys.
- About 85% of filtered Na+ is reabsorbed in proximal convoluted tubules.
- The remaining 15% is variably reabsorbed in the distal tubule, partly with Cl- ions and partly in exchange for K+ and H+ ions
- The regulation of sodium excretion is probably mainly through adjustment of this 15%.
- 'Aldosterone' effects on distal renal tubule, causing Na+ reabsorption and K+ excretion.

This effect is blocked by spironolactone.

Generalized Edema

An important stimulus to Aldosterone release comes from Renin - Angiotensin - Aldosterone system (RAA)

Any fall in ECF volume (e.g. Hypotension, Hemorrhage, Dehydration)

Stimulate the Juxtaglomerular apparatus (Kidney)

Secretion of Renin

Angiotensinogen (Liver) → Angiotensin I (Lung) → Angiotensin II

Stimulate "aldosterone" secretion from adrenal cortex

Vascularstriction

OEDEMA
Hypoproteinemic State

- failure of synthesis
- protein malnutrition (Kwashiorkor)
- cirrhosis
- long lasting ill-health from many causes
- increased loss as in nephrotic syndrome.

When serum albumin falls below 25 g/l, there is transudation of solutes (mainly salt and water) out of the capillaries into intercellular space. When this compartment is expanded by about 10%, clinically evident edema appears.

| Plasma protein level (esp. albumin) | Oncotic pressure | Transudation of solutes | Oedema |

DIFFERENT DISEASES WHICH CAUSES GENERALIZED OEDEMA

LEFT HEART FAILURE:
Heart failure may affect the right side, the left side, or both sides of the heart. The left side of the heart receives blood rich in oxygen from the lungs and pumps it to the remainder of the body. As the ability to pump blood forward from the left side of the heart is decreased, the remainder of the body does not receive enough oxygen especially when exercising. This results in fatigue. In addition, the pressure in the veins of the lung increases, which may cause fluid accumulation in the lung. This results in shortness of breath and pulmonary edema. Common causes of left-sided failure include the Drinking too much alcohol, Heart attack, Heart muscle infections. Right-sided heart failure occurs in about 1 in 20 people. Coronary artery disease is the most common cause of heart failure in the United States, but it can be a complication of other conditions. Heart failure may affect the right side of the heart (right ventricle), the left side (left ventricle), or both sides. In right-sided heart failure, the right ventricle loses its pumping function, and blood may back up into other areas of the body, producing congestion. Congestion affects the liver, the gastrointestinal tract, and the limbs. In addition, the right ventricle may be unable to pump blood efficiently to the lungs and to the left ventricle.

RIGHT HEART FAILURE;
Right-sided heart failure occurs in about 1 in 20 people. Coronary artery disease is the most common cause of heart failure in the United States, but it can be a complication of other conditions. Heart failure may affect the right side of the heart (right ventricle), the left side (left ventricle), or both sides. In right-sided heart failure, the right ventricle loses its pumping function, and blood may back up into other areas of the body, producing congestion. Congestion affects the liver, the gastrointestinal tract, and the limbs. In addition, the right ventricle may be unable to pump blood efficiently to the lungs and to the left ventricle.

NEPHROTIC SYNDROME;
Heavy Proteinuria, Hypoalbuminuria which causes decreased plasma oncotic pressure leads to generalized oedema

CIRRHOSIS;
Cirrhosis of liver causes plasma protein synthesis which causes decreased oncotic pressure causes generalized oedema.

DRUG REVIEW;
Vardhamana gudaardraka prayoga
“Prayojayedadraikanagara va tulyam gudenaardha palaabhi vridhya maatraam param pancha palaani maasamjeerne payo yusaha rasascha baktam”

- Fresh ginger with equal quantity of jiggery total of these 2 is ½ pala--- 1st day.
- Increasing the dose by ½ pala per day to the maximum of 5 palas (10th day).
- This 5palas of dose should be continued from 11th day to 30th day.
- Keeping on the diet of milk, vegetable soup (or) meat soup & rice.
- Sunti & guda both are having anti inflammatory activity.

RESULTS: Basing on below gradings results can be estimated

Utsedha absent-0, Mild- 1, Moderate-2, Severe-3
Ushma absent-0, Mild- 1, Moderate-2, Severe-3
Gourvam absent-0, Mild- 1, Moderate-2, Severe-3
Vivarnya and Presence of pitting absent-0, 5% above normal-1, 10% above normal-2, More than 10%-3

The Results are assessed by following criteria;
76%-100%--complete healing of symptoms is considered as GOOD.
51%-75%--- Of relief of symptoms is considered as Moderate.
<50%of relief of symptoms or No relief of symptoms is considered as poor.

Statistical analysis of results;

<table>
<thead>
<tr>
<th>Symptoms</th>
<th>BT SCORE</th>
<th>AT SCORE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Utsedha</td>
<td>14</td>
<td>5</td>
</tr>
<tr>
<td>Ushma</td>
<td>12</td>
<td>7</td>
</tr>
<tr>
<td>Gouravam</td>
<td>16</td>
<td>6</td>
</tr>
<tr>
<td>Vivarnyam</td>
<td>18</td>
<td>11</td>
</tr>
<tr>
<td>Chirottana prasamana</td>
<td>10</td>
<td>4</td>
</tr>
<tr>
<td>Measurement of girth</td>
<td>10</td>
<td>4</td>
</tr>
<tr>
<td>Pitting</td>
<td>12</td>
<td>5</td>
</tr>
</tbody>
</table>

Table no 3: Showing the relation between number of patients and percentage of relief in parameters.

<table>
<thead>
<tr>
<th>S.no</th>
<th>Intensity of swelling</th>
<th>No.of patients</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>No swelling</td>
<td>3</td>
<td>60%</td>
</tr>
<tr>
<td>2</td>
<td>Mild swelling</td>
<td>2</td>
<td>40%</td>
</tr>
<tr>
<td>3</td>
<td>Moderate swelling</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>4</td>
<td>Severe swelling</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

Table no 4: Showing the overall percentage of relief.

<table>
<thead>
<tr>
<th>Results</th>
<th>No.patients</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Good/compleate relief</td>
<td>3</td>
<td>60%</td>
</tr>
<tr>
<td>Moderate relief</td>
<td>2</td>
<td>40%</td>
</tr>
</tbody>
</table>
DISCUSSION

According to present Results 40% of patients belong to smokers & alcoholics. Out of 5 Patients 2 female & 3 are male having oedema in lower limbs & face. It is observed clinically the incidence of the disease is more prevalent in the age group 40 to 59 yrs. 3 Patients got maximum relief & 2 Patients got moderate relief.

CONCLUSION

In this clinical study, the VARDHAMANA GUDAARDRAKA PRAYOGA showed highly significant anti inflammatory activity. Puranaguda is having lagu guna, vata hara, pitta hara, patyakara anabhishyandhi Mutrala. According to susrutha guda is adhi-kagunakari & atyantha patyakara. Sunti is having katu rasa, lagu, ruksa, teekshna guna, Ushna virya & madhura vipaka. Pharmacological action of sunti is kapha vata hara & sotha hara.

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