

**AN PHYTOCHEMICAL AND EXPERIMENTAL STUDY OF PARUSAKA (*Grewia asiatica* linn.) WITH SPECIAL REFERENCE TO ANTI-PYRETIC ACTIVITY**

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**Abstract**

Jwara is first among the diseases explained in ayurvedic classics which needs immediate care and cure otherwise lead to the complications. It is said that each and every individuals suffers from jwara at the time of birth and death. Increase of body temperature or fever is the common feature in most of the diseases particularly in children if not controlled, properly in time worsens the disease condition. Hence the control of temperature is must in the treatment of any disorder. Rectal temperature above 100.4<sup>0</sup> F and 38.0 C is considered as fever.

**Key words** – Jwara, Children,

**Introduction**

Jwara is first among the diseases explained in Ayurvedic classics which needs immediate care and cure otherwise it leads to the complications. It is said that each and every individuals suffers from Jwara at the time of birth and death. It is also believed that the doctor who is able to treat Jwara can control any other diseases easily because; all the modes of treatments are advisable to cure the condition in different stages. Children are frequently prone to Jwara due to

their immaturity of tissues . Parusaka drug described as jwarghna under phaladi varga in madanapala Nighantu, amradi varga in raja Nighantu. Parusaka is commonly used as a natural food additive it is a good source of vitamin A and vitamin C. The entire study was divided into 5 sections viz. Review of literature, Drug review, Experimental study, Discussion and Summary and Conclusions.

**Review of Literature :**

*Grewia asiatica* linn is a small tree or shrub, majorly is perennial, a

few annually, cultivated in tropical countries. Herbal formulation such as Parushakadi leham drakshadi kashayam, chandanadi tailam etc. The plant has other vernacular names such as phalsa in hindi, pharosakoli in Bengali, phutiki in telugu, chadicha in Malayalam, dagala in kannada. In Samhita charaka mentioned in virecanopaga and Jvarahara and sushruta mentioned in parushakadi gana. Parushaka prescribed for the treatment of major jwara, yoniroga shodaka, hrudya, arsha, varnya etc.

The macroscopic and microscopic description of a medicinal plant is the first step towards identification and determination of purity. However, such an attempt as not been made on *Grewia asiatica* linn so far. In the present communication, we devoted our effort to document the pharmacognostic future of the entire plant to identify the plant its crud form. And the complete study of parushaka drug , pharmacognostical study and

phytochemical study has be done here.

### **Materials and Methods :**

Grouping:

All healthy albino rats of either sex weighing from 110 gm to 180 gm are subjected to detailed examination and group in to 3 of 6 rats each

1. Group A: Treated with known standard drug – Paracetamol
2. Group B: Treated with experimental drug – aqueous extract of parushaka
3. Group C: Treated with experimented drug – alcoholic extract of parushaka

Monitoring:

Rats of either se are divided into different group, the body temperature is measured rectally and fever is induced in rat like brewers yeast injection. Pre determined interval before and for after 18 hours admistration of test drug and standard drug.

Macroscopy study :

Fruits: grow in bunches from leaf axilla, ripen in summer and act as nature's boon against scorching summer heat. Round pea like fruit is green when unripe and tastes sour.

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When ripe, it is a fleshy fibrous drupe, grayish to reddish purple in colour. Outer tomentose surface has black circular depressed spots with large stellate covering trichomes. Outer surface is covered by small stellate covering trichomes. Ripe fruit tastes typical sour and sweet, a taste people enjoy as Sherbet during summer heat. Seeds: 1 or 2 pointed at one end and have a groove. There are 1 to 2 chambers. Endosperm is oily. Seed coat is stony hard.

Microscope Study:

Prismatic crystals, rosette crystals, parenchymal cells; from the mesocarp cells: crystal fibre, spiral vessels. Epidermis: Epidermal cells, Stilet and Starshaped hairs, Stilet type of Trichomes were found. On Iodine staining: Starch grains and Aleurone grains were found.

Physico – chemical parameters: Various physico-chemical tests were performed as per the standard procedure mentioned in Ayurvedic Pharmacopoeia of India. Results are:

Table No – 1

Sl. No	Physico – chemical parameters	Results
1	Ash value	2.24
2	Loss on drying	1.90
3	Alcohol soluble extractive	56.80%w/w
4	Water soluble extractive	56.29%w/w
5	pH value	5.5

**Results :**

Observation of Experimental Study as follows Table No 2. Showing antipyretic effect in °C after 30 min

Rat No	Group 1	Group 2	Group 3
1	38.51	38.40	37.99
2	38.42	38.03	38.50
3	37.52	38.51	38.40
4	38.36	38.46	38.30
5	38.49	38.46	38.20
6	38.50	38.39	37.00

Table No 3. Showing antipyretic effect in °C after 60 min

<b>Rat No</b>	<b>Group 1</b>	<b>Group 2</b>	<b>Group 3</b>
1	37.60	37.01	37.03
2	37.61	37.12	37.23
3	37.58	37.08	37.42
4	37.62	37.04	37.36
5	37.48	37.11	37.37
6	37.54	37.09	37.28

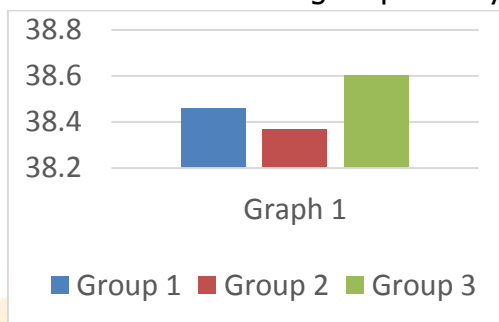
Table No 4. Showing antipyretic effect in °C after 120 min

<b>Rat No</b>	<b>Group 1</b>	<b>Group 2</b>	<b>Group 3</b>
1	37.30	36.53	36.42
2	37.12	36.50	36.21
3	37.09	36.49	35.18
4	37.13	36.51	35.40
5	37.06	36.43	35.39
6	37.05	36.59	35.39

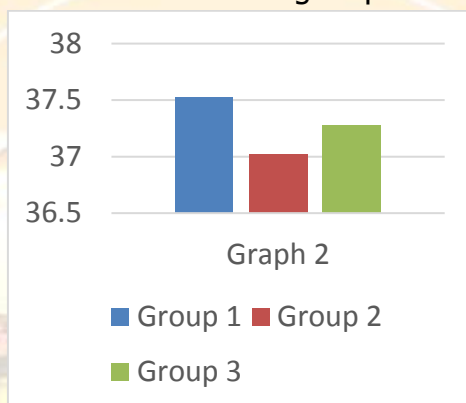
Table No 6. Showing antipyretic effect in °C after 180 min

<b>Rat No</b>	<b>Group 1</b>	<b>Group 2</b>	<b>Group 3</b>
1	36.50	36.01	35.02
2	36.52	36.08	35.12
3	37.61	36.39	35.19
4	36.64	36.11	35.20
5	36.59	36.18	35.18
6	36.55	36.06	35.01

Graph No 1 showing mean Temperature in °C at 30 min and 60 min after Administration of drug respectively



Graph No 2 showing mean Temperature in °C at 120 min and 180 min after Administration of drug respectively



### Discussion :

In ayurvedic classics vedanasthapana and jwaraghna effect of parushaka fruit is explained on its rasapanchaka, as it is having madhura rasa, madhura vipika, seetaveerya and ushna guna, by which its help is agni deepana and ama pachana, and removes srotovarodha by this bahirgata ushana comes to the kosta subsiding jwara. The important chemical constituents of parushaka like flavonoids, tannins,

essential oil, carbohydrates, proteins etc also play an important role in reducing fever.

### Conclusion :

Hence I concluded with the paruska as a drug of choice in jwara. By taking into consideration of the experimental study carried out and albino rats which proved to be more significant on the statistical analysis and flowing conclusions were derived

- Parushaka is having antipyretic, Deepana, Rochana properties.
- Parushaka is having antipyretic,

Deepana and Dahaprashamana properties.

- The drug are effective in fever, anorexia, Angamarda, Shirashula and Trushna.
- Adverse effects were not observed during this study

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