Comparative Study of Shodhana Precessed Guggul by using different purification media

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Abstract

Ayurveda– The science of life is known to the mankind since time immemorial. It prolongs life span, maintains positive health and cures diseases. With a view to achieve these aims and objectives different types of drugs, found in nature from the natural resources whether these may be herbal animal or minerals have been in use. Shodhana is an important technique necessary for almost all kinds of drugs to remove their Doshas (impurities or toxic contents). Shodhana is a process of purification and detoxification by which physical and chemical blemishes and toxic materials are eliminated and substances are subjected for further processing. Guggul was subjected to purification process by using various purification media like Distilled water, Triphala Kwath decoccation and Gomutra. The study of Shodhana process revealed the pharmacognostic and pharmacological changes. It shows increase in some constituents like Steroids, sugars, flavonoids etc. The study of shodhana process of Guggul reveals the impact of how the physico-chemical changes affect the pharmacological activity of a drug before and after shodhana process.

Introduction

Ayurveda - The knowledge of life has been known to mankind from the beginning of time. It increases life expectancy, promotes good health, and cures ailments. Different sorts of medications, discovered in nature from natural resources, whether herbal, animal, or mineral, have been used to attain these goals and objectives. Shodhana is an Ayurvedic purification treatment that involves soaking, rubbing, and washing hazardous medicinal herbs (upavishadravyas) with specialised media such as gomutra (cow's urine), Godugdha (cow's milk), Guduchi Kwath, Triphala Kwath, Pancha Tikta Kwath, Dash Moola Kwath, Nimba Patra Kwatha with Haridra Churna, Nirgundi Patra and other pharmaceutical procedures to remove the doshas. Poisonous plants are subjected to shodhana sanskara (purification process), before their therapeutic use. This process use to remove doshas and to reduce toxicity of poisonous plant considerably and keeps it at required optimum level.

Need For Purificationl of Guggul

Purification of a natural herb has two goals. The first step is to get rid of any external or internal contaminants. The second reason is to boost the therapeutic value of the product. As Guggul is unorganized drug dust, dry leaves, and other foreign components found in Guggul are examples of external contaminants. Purification makes the herb safer and more effective to use. In some cases, extra therapeutic properties are included in the formulation.

Materials and methods

Collection and Authentication of Plant Material:

Guggul (Commiphora mukul) is procured from a local market and authenticated from Agharkar Research Institute in Pune.

Physical Evaluation:

- Determination of Loss on drying (Moisture content)
- Determination of ash values:-
- Determination of Acid insoluble ash value
- Determination of Water soluble Ash value
- Determination of extractive values:-
- Determination of Alcohol soluble extractive value
- Determination of Water soluble extractive value

Pharmacological Evaluation:

Experimental Animals:

Wistar albino rats of either sex, weighing 150-250 gms, were used in this study. The experimental protocol was approved by the Institutional Animal Ethical Committee. Animals were kept in standard conditions in an animal house approved by the Committee for the purpose of controlling and supervising Animal Experiments (CPCSEA).Albino rats were housed in Polypropylene cages and kept at 24oC ± 2oC with a 12 h light/dark cycle. They were fed ad libitum with a standard pallet diet and had free access to water.

Discussion

Preliminary Phytochemical test:

From the test results it is concluded that the concentration of steroids in Gomutra and Triphala shodhit guggul is high as compared to Crude, distilled water shodhit guggul. Terpenoids, Flavonoids and Proteins were reduced in purified guggul compare to crude guggul. Concentrations of Carbohydrates were reduced in purified guggul compare to crude guggul. But, amongst them Triphala shodhit guggul shows high amount of Carbohydrates.

Physical evaluation of crude and purified Guggul:

Sr. No.	Parameters	Crude	DSG	TSG	GSG
1.	Total Ash	18.5%	5%	15%	11.2%
2.	Acid insoluble Ash.	1%	2%	5.33%	2.5%
3.	Water soluble Ash.	2%	6.5%	9%	7.5%
4.	Alcohol Ext.	20%	29.6%	33.6%	31.2%%
5.	Water Ext.	76%	49.6%	60%	52.8%

Haematological evaluation of crude and purified Guggul:

Sr No.	Parameters	Control	Crude	D/W	TSG	GSG
1.	Hemoglobin	10.2	5.1	6.9	7.2	7.8
2.	RBC	4.8	3.90	4.10	4.30	4.49
3.	WBC	5,500	4,300	6,800	7,800	8,200

Results

Phytochemical Test: From the test results it is concluded that the concentration of steroids in Gomutra and Triphala shodhit guggul is high as compared to Crude, distilled water shodhit guggul. Terpenoids, Flavonoids and Proteins were reduced in purified guggul compare to crude guggul. Concentrations of Carbohydrates were reduced in purified guggul compare to crude guggul. But, amongst them Triphala shodhit guggul shows high amount of Carbohydrates.

Physical Evaluation:

Total ash: Total ash value were decreased in purified guggul as compare to crude guggul.

Acid insoluble ash: Acid insoluble ash value was increased in purified guggul as compare to crude guggul. **Triphala shodhit guggul** shows more Acid insoluble ash than other purified guggul.

Water soluble ash: Water soluble ash value was increased in purified guggul as compare to crude guggul. **Triphala shodhit guggu**l shows more water soluble ash than other purified guggul.

Alcohol soluble extractive value: Alcohol soluble extractive value of crude guggul was decreased as compare to purified guggul. This Indicate the alcohol soluble constituents are present in less amount to that of crude guggul.

Water soluble extractive value: Water soluble extractive value of crude guggul was increased as compare to purified guggul. This Indicate the presence of water soluble constituents in the purified guggul.

Conclusion

Guggul was subjected to purification process by using various purification media Distilled water, Triphala Kwath decoccation and Gomutra. The study of Shodhana process revealed the pharmacognostic and pharmacological changes. It shows increase in some constituents like Steroids, sugars, flavonoids etc. in Gomutra shodhit guggul as compare to crude guggul. By the pharmacological study it is also indicate that the Triphala shodhit Guggul showed enhanced anti-inflammatory activity.

Acute and sub-acute toxicity study was performed on crude as well as purification guggul. No toxicity was observed in purified guggul as compare to crude guggul which shows some symptoms of toxicity.

The study of shodhana process of Guggul reveals the impact of how the physico-chemical changes affect the pharmacological activity of a drug before and after shodhana process.

Thus, the purpose of Shodhana process of Guggul is proved experimentally showing enhancement of pharmacological activity and no symptoms of toxicity.

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