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Research Article

PREPARATION AND STANDARDIZATION OF MADURISHT: POLYHERBAL FORMULATION

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ABSTRACT
Pharmaceutical ayurvedic research is aimed at meeting the medical needs of the population for whom appropriate therapeutic remedies are not available or at those that are available are but not effective for various disorders. While meeting medical needs of a polyherbal formulation set some parameters to ensure that the formulation shows desired pharmacological action against various diseases. The selection of an appropriate drug should take into account apart from medical needs and innovative potential for success. The standardization of crude drug materials includes authentication, organoleptic evaluation, ash values, extractive values, moisture content determination and Carr's index etc. These parameters are required for authentication of any herbal drug and its formulation.
Keywords: Standardization, Extractive value, Carr's index, Poly herbal, Polyherbal formulation

INTRODUCTION

Churna is defined as a fine powder of drug or drugs in ayurvedic system of medicine. Drugs mentioned in patha, are cleaned properly, dried thoroughly, pulverised and then sieved. The churna is free flowing and retains its potency for one year, if preserved in an air tight containers. Triphala churna, Trikatu churna, Drakeshadi churna and Sudharsana churna are some of examples. These forms of medicament are prescribed generally because of their particle size. Smaller the particle size greater is the absorption rate from g.i.t and hence the greater is bioavailability.[1] It is prescribed by the Ayurvedic physician for treating conditions such as diabetes, indigestion, constipation etc. Preparation of polyherbal medicine is based on traditional methods in accordance with the procedure given.[2] Due to lack of modern phramacopoeial standards laid down and followed processing of herbal formulation using traditional methods, the medicine prepare may not have the desired quality and batch-to-batch consistency. Hence there is a need for standardization of herbal formulation as prescribed by WHO. The process of evaluating the quality and purity of crude drugs by organoleptic, physiochemical parameters and flow properties of powder[3,4].

MATERIALS AND METHODS

An Antidiabetic churna (AC) Madurisht used as antidiabetic was purchased from local market. This is a polyherbal formulation consisting of 8 ingredients in all, with specific morphological parts of the plants used and each ingredient being of desired quantity. For standardization of AC, some modifications were made. Jamun (seed), Karela (fruit), Neem (leaves), Methi (seed), Amla (pulp of fruit), Tulsi (leaves), Guduchi (seed), Bael (leaves) known to have antidiabetic properties. The AC was procured from the local market or from, after a preliminary identification was made based on the Ayurvedic parameters such as (colour), gandha(odour), ruchi(taste), aakruti varna(shape) and parimana(size).

Preparation of polyherbal formulation

Formulation was made by taking equal proportion of each powdered drugs. All the procured and authenticated individual drugs were dried in shade and cleaned by hand sorting. The individual drugs were then crushed using willing grinder and passed through mesh no. 40. The individual drugs were then weighed as per the quantity required. The drugs were mixed geometrically using a double cone blender. The mixed formulation was unloaded, weighed, and packed in labeled glass bottles.[5]

Physicochemical properties

Organoleptic and Physio-chemical studies like water soluble extract, alcohol soluble extract, ether soluble extract, hydroalcoholic soluble extract, total ash, water soluble ash, acid insoluble ash, water, moisture constant at 105°C, bulk density, tap density, Hausner ratio, Carr's index ph of suspension were carried out as per the WHO guide lines [6,7].

RESULTS

As part of standardization procedure, AC were tested for relevant physical and chemical parameters Quality tests(Table 1)for AC were performed for moister content, water soluble extractive, methanol soluble extractive, ash content, and acid insoluble ash and were found to be within standard ranges[8]. Deterioration time of the plant aterial depends upon the amount of water present in plant material. If the water content is high, the plant can be easily deteriorated due to fungus. Total ash value of plant material indicated the amount of minerals and earthy materials present in the plant material[9]. The water-soluble extractive value indicated the presence of sugar, acids and inorganic compounds. Less or more extractive value indicates addition of exhausted material, adulteration or incorrect processing during drying, or storage or formulating. Tapped density gives information on consolidation of a powder. The Hausner ratio and Carr's index are both measures of the flow properties of powders. The smaller the Carr's Index the better the flow properties[10].

DISCUSSION

The result obtained would be used to lay down a set of new Pharmacopoeial standards for the preparation of anti-diabetic churna to obtained optimal efficacy of the medicine. In the present study it was concluded that the physicochemical parameters such as the water-soluble, alcohol-soluble, and, moisture content, bulk density, tapped density, Carr's index, Hausner's ratio, pH, water-soluble ash, acid-insoluble ash, and organoleptic characteristics can be efficiently used for

standardization of polyherbal formulation[11]. The results obtained from the study could be utilized as a reference for setting limits for the reference standards for the quality control and quality assurance of these drugs[12].

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TABLE:1- DIFFERENT PHYSICOCHEMICAL PARAMETERS

S. No.	Parameters	Marketed formulation	In home formulation
1.	Water soluble extractive value	11.1%	3.75%
2.	Alcohol soluble extractive value	4.3%	2.65%
3.	Hydro alcohol extractive value	5.65%	8.85%
4.	Moisture content	1.01	1.6
5.	Total Ash	8%	9.9%
6.	Acid insoluble Ash	1.4%	1.6%
7.	Water soluble Ash	3.6%	4.2%
8.	Carbonated Ash	11%	10%
9.	Sulfated Ash	13%	12%
10.	Nitrated Ash	2%	2%
11.	Bulk density	14 m/v	13 m/v
12.	Tapped density	07 m/v	09 m/v
13.	Carr's index	31.2%	28.1%
14.	Hausner Ratio	0.5	0.069

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