

AN ANALYSIS OF PARTICLE SIZE OF UNANI PREPARATIONS IN SOLID DOSAGE FORMS

Parveen. S

Phd Scholar Department of Pharmacy, Monad University, Hapur (India)

ABSTRACT

In unani medicine there is a vast concept regarding to treat diseases according to natural way like some dosage forms are in unani medicine used as a beatification as well as disease like kohl the use of kohl (surma) it is used as beatification and in beginning of cataract and corneal opacity is very effective. It has been documented that in dermal ointments, creams, and ophthalmic preparations, nongritty fine powders should be used. Fine particles of 50–100 μm in size can be used for this purpose. With this preview the particle size of Kohal was assessed by Hydro 2000S (A) technique and it was found that particle size of Kohal was within the prescribed range that is below 100.

Key Words: Kohal, Safoof, Surma

I INTRODUCTION

Kohl is an Arabic word and in Persian it is termed as surma⁴. It is a special type of sufoof which is in the form of very fine powder, applied externally and is especially meant for ocular treatment. Usually it is applied in the form of sufoof to the eye directly by means of a collyrium stick but some kohal are mixed with water or appropriate liquid before application as in case of kohal chikni dawa. Sang-e-Surma (Antimony) is the basic ingredient of kohal, but its presence in formula is not necessary. kohal are mainly used as a tonic for eye. Some specialised kohal are indicated for other eye ailments like incipient cataract, pterygium, xerophthalmia etc. It is believed that kohal were invented by pythagoras⁴.

In ancient times the leaves, barks, fruits, roots etc. of the plants were chewed for medicinal purpose or were consumed after the expression of their juices or aqueous extract, with or without sieving. According to the tradition of the ancient hakims. Aristotle has been credited with the discovery of sufoof.⁶

According to National Formulary of Unani Medicine (NFUM) Kohal and Barood shares the same definitioun that is "Kohal (Barood) is the finest form of medicinal preparations used externally to strengthen eye sight and to cure other eye ailments".⁵ but in classical literature theses two dosage forms have different identity.

In 1995, it was estimated that 38 million people in the world i.e., 0.7% of the total population are blind, while an additional 110 million people have visual impairment. Cataracts are still a major cause of blindness, accounting for 13–27% of the blind people, strongly increasing with age.⁷

Kohl-Chikni Dawa (KCD) is a compound herbo-mineral ophthalmic formulation (*Kohl, Surma*) of Indian origin (invented by Hakeem Shareef Khan) used in Unani medicine⁸. The drug is reputed for its beneficial effects in the treatment of premature cataract.

II MATERIAL AND METHODS

KCD was prepared after proper identification and quantification of the constituents under aseptic conditions as per the method described¹¹⁻¹². Hard soap was cut into small pieces and heated in an iron pot. As the soap started to melt, copper sulphate was added and allowed a complete liquefaction. Resin powder of *Shorea robusta* was then added and heated till the drug got burnt and converted into dry ash. After cooling, the drug was powdered by using a grinder and filtered through a sieve (size 120). The filtrate (micro-fine powder) was collected in a bottle and labeled as *Kohl-Chikni Dawa*. Fresh solution (3%) (1 ml contain 45 mg) of *KCD* in distilled water was prepared before instillation¹³. Then the prepared *Kohal* was analysed by Hydro 2000S (A)

So in this study show the results that the particle size for the ophthalmic preparations is measured in that range which necessary. Fine particles of 50–100 μm in size can be used for this purpose. 1

III FACTORS AFFECTED BY PARTICLE SIZE

Particle size can affect a number of factors important to dosage form preparation as well as applications. They are dissolution rate, suspendability, uniform distribution, penetrability, and non-grittiness.

The dissolution rate of particles is dependent on the particle size. The smaller the particle size, the faster is the dissolution. In suspension preparation, it is important to have a good suspendability (*i.e.*, ability to maintain uniform dispersion in liquid vehicle) of particles. In a powder mixture or capsule and tablets preparation, the ability of a drug to have uniform distribution is essential. For intra-respiratory applications, the penetrability of inhaled particles to reach a desired location within the respiratory tract is important for deep deposition in the respiratory tract. The size range of 1–5 μm is widely used. In dermal ointments, creams, and ophthalmic preparations, nongritty fine powders should be used. Fine particles of 50–100 μm in size can be used for this purpose¹.

IV PARTICLE-SIZE ANALYSIS

Powder is a mixture of finely divided drugs in dry form. Dry powders, however, can be taken orally by some patients who are unable to swallow other solid dosage forms such as capsules and tablets. They are widely used in preparation of various dosage forms. Powdered drugs can be blended with other powdered materials prior to fabrication into other solid dosage forms. Powdered drugs are frequently added to other ingredient to make ointments, pastes, suppositories, and others¹.

Powder properties relevant to pharmaceutical formulations are single-particle properties, bulk properties, particle–particle interactions, powder morphology (particle size, specific surface area, porosity, and particle shape), It is also important for preparing powder formulation to understand hoppers and powder transfer methods, mechanisms of particle-size reduction¹.

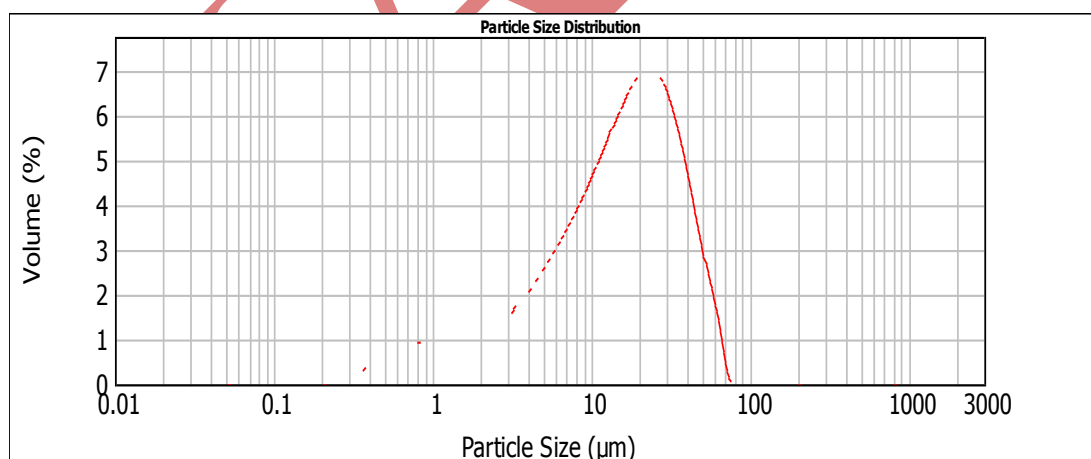
The particle size of powders is standardized according to the USP descriptive terms, such as, very fine, fine, moderately coarse, coarse, and very coarse.

Table :1.1

Designation	Maximum Diameter	Requirements
Very Fine	$\leq 125 \mu\text{m}$ ($\leq 0.125 \text{ mm}$)	(passes through a No. 120 sieve)
Fine	$\leq 180 \mu\text{m}$ ($\leq 0.180 \text{ mm}$)	(passes through a No. 80 sieve)
Moderately coarse	$\leq 425 \mu\text{m}$ ($\leq 0.425 \text{ mm}$)	(passes through a No. 40 sieve)
Coarse	$\leq 850 \mu\text{m}$ ($\leq 0.850 \text{ mm}$)	(passes through a No. 20 sieve)

V RESULT

In this study shows that the particle size for the ophthalmic preparations are required in the range below $100 \mu\text{m}$ and the measurement of particle size assessed by the technique hydro2000S (A) the graph 1.1 shows the result

Graph 1.1**Measurement of size by Hydro 2000S (A) technique****REFERENCES**

- [1]. Daizo Kunii & Octave Levenspiel (1991) *Fluidization Engineering*, 2nd ed., John Wiley & Sons: New York, NY. Khan, Bayaze Ajmal. Delhi. Aijaz Publication house, 2010: 245.
- [2]. Ghani N. Khazainul Advia. Vol.1. New Delhi: Idara Kitabul Shifa, 1971: 110,113, 117, 120.

- [3]. Zillurerman S. Kitabul Murakkabat. Aligarh Publication division Aligarh Muslim University; 1991: 30, 109, 124.
- [4]. Anonymous. National Formulary of Unani Medicine. Part IV, 1st ed New Delhi, CCRUM Ministry of Health & F.W, Govt. of india, 2001: 36, 78.
- [5]. Said M, Hamdard Pharmacopoeia of Eastern Medicine, New Delhi, Sri Satguru Publication 1997; 56, 223, 300.
- [6]. Thylefors B, Negrel AD, Pararajasegaram R, Dadzie KY: Global data on blindness. WHO Bull 1995, 73:115-121.
- [7]. Jameel MA: Kohl-Chikni Dawa. Tabeeb-e-Haziq (Ajaebat-e-Tibb). New Delhi, India, Aijaz Publishing House 1960, :59-60.
- [8]. Afzal M: Kohl-Chikni Dawa. Hamara Matab Mae-Matabe-Salami, Lahore, Pakistan, Upal Shafakhana 1930,321.