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## **Review Article**

# EVALUATION OF MACROSCOPIC STOOL EXAMINATION IN AYURVEDA THROUGH MODERN PARAMETER

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#### **ABSTRACT**

The body is consisting of Dosha, Dhatu and Mala. Mala in terms of Mutra, Purish and Sweda are the waste products of Anna rasa. In any pathological condition the characters of Dosha, Dhatu and Mala gets altered. Among these factors, clinical examinations of Mutra and Purish have been described in Ayurveda. The methods of examination of stool have not been elaborately mentioned in ancient text of Ayurveda. In modern era, there is an urgent need to evolve a comprehensive method of stool examination as per modern parameters in accordance with principles of Ayurveda, so that this can be followed by the bedside of patients on clinical practice as well as in pathological laboratory. This is consisting collection of stool sample, examination and interpretation of the findings. Stool can be examined macroscopically on the basis of following parameters: colour, odour, consistency, presence of mucus, presence of blood, and presence of any special characters. Each of the parameters can be further interpreted on the basis of different clinical features of stool mentioned under Purvarupa, Rupa, Asadhyalaksna of different disease. This comprehensive approach towards stool examination will not only validate Ayurvedic principles on the basis of modern knowledge, this will also help in diagnosis, prognosis and treatment of diseases as well as will be very useful to make differential diagnosis of a disease.

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#### INTRODUCTION

In Ayurveda, Agni is the chief factor for maintaining the normal physiology in human body. The digestion absorption and metabolism are depended on the normal function of Agni.[1] By the action of Agni Anna (food) undergoes metabolic transformation in two ways i.e. Prasad paka (transformation of nourishing part) and *Kittapaka* (transformation of waste product.<sup>[2]</sup> The *Malas* (waste products) of Anna (food) are Purish (stool) and Mutra (urine).[3] In different Ayurvedic texts stool has been termed as Vida, Purish and Mala.[4] The normal amount of Purish (stool) in human body is 7 Anjali.[5] The normal Mala is mildly offensive in odour, tolerable in temperature, formed in consistency and passes out in proper time.<sup>[6]</sup> It has been said that function of *Purish* is to support the body and maintain the equilibrium of Vayu and Agni.[7] As Purish viz-a-viz Mala is one of the essential component of Sarir (human body).[8] So in any pathological state character of *Purish* gets altered. So the examination of different characters of *Purish* gives a very important interpretation about the actual pathological state.

In classical text *Mala Pariksha* has been considered as an important tool of *Rogi Pariksha* i.e.

examination of patient. Several methods of Mala Pariksha have been mentioned by different scholars. In Brihatrayi hydrostatic examination of Mala has been mentioned.[9] In later period Yogratnakar has included Mala Pariksha under eight different process of clinical examination known as *Astavidha Pariksha*. In clinical practice *Mala* or stool should be examined for diagnosis as well as prognosis of disease. In modern science examination of stool is a very important component of pathological study of a disease. A stool test involves the collection and analysis of fecal matter to diagnose the presence and absence of clinical condition. In modern science stool examination consist gross macroscopical examination by naked eye as well as microscopical, biochemical and microbiological test. All these examinations are based on scientific criteria of stool which are globally accepted and maintained. In Ayurveda, Mala (stool) should be examined macroscopically and without help of any electronic equipment and chemical reagent. Although different pathological features of Mala (stool) has been elaborately described under the various pathological states, but unfortunately no specific guideline has been mentioned in relation to Mala Pariksha. Largely Mala *Pariksha* in Ayurveda is based on individual observation without having any standard parameters which can be maintained globally. So for pathological examination of stool, a compact approach should be taken on the basis of some standard characters of stool in accordance with modern pathology.

#### **AIMS & OBJECTIVES**

The present study is aimed to evaluate a standard procedure of *Mala Pariksha* in *Ayurveda* in accordance with modern pathology. More over the present study will also try to evaluate some standard parameters on the basis of which *Mala* can be examined. Lastly the authors will try to prepare a comprehensive table regarding possible interpretation of every finding in accordance with principle of Ayurvedic diagnosis based on the book *Madhav Nidan*, which can be used at bed side of the patient by both students and professionals.

#### **MATERIALS AND METHODS**

Although *Yogratnakar* has described details procedure of collection and examination of *Mutra* (urine) under *Astovidha Pariksha*, unfortunately he has not mentioned any standard guideline of collection and examination of *Mala* (stool). As scientific collection of sample is the first and foremost condition for an accurate pathological test, so in absence of proper guideline of stool sample collection in Ayurvedic text a scientific procedure in accordance with modern pathology is proposed below.

#### **Process of Sample Collection**

Stool (preferably morning sample) should be collected in a clean transparent odourless glass container. After collection the container should be labelled with patient's name, age, sex, patient's ID number and date of collection. After collection examination should not be delayed for more than 4-6 hours. In between collection and examination the container should be stored in a cold and dry place away from sunlight.

#### **Examination of Stool**

The collected sample of stool should be examined under the natural sunlight and away from strong breeze. This is because presence of any artificial light gives a wrong impression regarding actual colour of stool and presence of strong breeze blows away the normal and abnormal smell of stool. Stool examination should be done preferably in *Pratakal* (morning) when

adequate sunlight is available and surrounding atmospheric temperature is not too hot.

In Ayurveda *Mala Pariksha* is done through direct observation using different *Indriyas* i.e., sensory organs like eye (*Darsanendriya*), nose (*Ghranendriya*), and touch (*Sparsendriya*). So in accordance with parameters of pathological macroscopic examination of stool, some standard parameters of stool examination in Ayurveda can be proposed. These are -

- 1. Colour
- 2. Odour
- 3. Consistency
- 4. Presence of mucous
- 5. Presence of blood
- 6. Any special characters

In accordance with Ayurvedic thought the above parameters can be compared as below.

Colour-Varna

**Odour**-Gandha

Consistency (hard/semisolid/watery): (Gaadha/Vaddha)/(Vinna-barcha/Vida-bhed) / Drava accordingly Presence of mucous: presence of Slesma, Ama and

Picchilatva.

Presence of blood: Raktayukta

Any special characters - *Phena-yukta*, *Sita*, *Usna*, *Snigdha*, *Sandra* etc.

#### Interpretation

The findings of stool examination can be interpreted in relation with different pathological conditions. This interpretation will help us to diagnose a disease more precisely as well as to determine specific stages of a disease along with *Dosha Dhatu* involvement, presence of complication (*Upadrava*) and to assess the morbidity (*Sadhyasadhyata*) of a disease.

Almost all the text of *Ayurveda* has described different pathological characters of stool in relation with various diseases. But among them, '*Rogavinischaya*' by *Acharya Madhavkar* which is more commonly known as '*Madhav Nidan*' stands tall. *Madhav Nidan* deals with diagnosis of a disease on the basis of *Panchanidan* (*Nidan-Purvarupa-Rupa-Upasaya-Samprapti*) as well as prognosis of a disease on the basis of *Sadhyasadhyata*. So in this interpretation of stool examination, the authors have followed the opinion of *Acharya Madhavkar* in relation with different characters of stool in various pathological conditions.

A comprehensive chart consisting parameters of stool examination, findings and their possible interpretation is hereby given below

<b>Parameters</b>	Findings	Possible interpretation
Colour (Varna)	Pita (yellowish)	Pittaja Jwar <sup>[10]</sup>
		Pittaja Atisara <sup>[11]</sup>
		Pittaja Grahani <sup>[12]</sup>
		Pittaja Arsa <sup>[13]</sup>
		Purvarup of Pandu <sup>[14]</sup>
		Pittaja Pandu <sup>[15]</sup>
		Pittaja Swarabhed <sup>[16]</sup>
		Pittajaudar <sup>[17]</sup>

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	Krishna (Blackish)	Vataja Arsa <sup>[18]</sup> Vataja Swarabhed <sup>[19]</sup>
	Shukla (whitish)	Kaphaja Jwar <sup>[20]</sup> Kaphaja Atisara <sup>[21]</sup> Kaphaja Udar <sup>[22]</sup>
	Shyava (grey)	Raktajaarsa (Vata-anubandha) <sup>[23]</sup> Vataja Udar <sup>[24]</sup>
	Aruna (reddish-brown)	Vataja Udar <sup>[25]</sup> Vataja Atisara <sup>[26]</sup>
	Lohita (reddish)	Pittaja Atisara <sup>[27]</sup>
	Panduvarna	Kaphaja Arsa <sup>[28]</sup>
	Nila (blue)	Pittaja Atisara <sup>[29]</sup> Pittaja Arsa <sup>[30]</sup>
	Swetapita (whitish-yellow)	Rakatarsa (Slesmaanubandha) <sup>[31]</sup>
	Nilapita (bluish-yellow)	Pittaja Grahani <sup>[32]</sup>
	Raktapita (reddish-yellow)	Kamala <sup>[33]</sup>
	Krisnapita (blackish yellow)	Asadhyalaksana of kamala <sup>[34]</sup>
	Shyaba-aruna	Vataja Udar <sup>[35]</sup>
	Harita (greenish)	Pittaja Arsa <sup>[36]</sup> Asadhyalaksana of Pandu <sup>[37]</sup>
	Haridra (deep yellow)	Pittaja Arsa <sup>[38]</sup>
	Nana-varna (multiple colour)	Amaja Atisara <sup>[39]</sup>
Odour (Gandha)	Durgandha/Visragandha (foul smelling)	Amayukta Purish <sup>[40]</sup>
		Slesmaja Atisara <sup>[41]</sup>
	Nirgandha/ Gandhavat (with/without bad smell)	Sokaja Atisara <sup>[42]</sup>
	Puti-pakva (foul smelling)	Grahani (Samanyalaksana) <sup>[43]</sup>
Consistency	Kathina/Gaadha (hard)	Vataja Jwar <sup>[44]</sup>
,		Raktarsa (Vata-anubandha) <sup>[45]</sup>
	Baddha (hard)	Vataja Arsa <sup>[46]</sup>
		Asadhyalaksana of Pandu <sup>[47]</sup>
		Maha-swas <sup>[48]</sup>
		Praviddhalaksana of Amavat <sup>[49]</sup>
	Guru (heavy)	Kaphaja Grahani <sup>[50]</sup>
		Raktarsa (Slesma-anuvandha) <sup>[51]</sup>
	Vinnavarcha	Kaphaja Grahani <sup>[52]</sup>
	(semi-solid)	Pittaja Pandu <sup>[53]</sup>
		Panaki <sup>[54]</sup>

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			Pittaja Murcha <sup>[55]</sup>
			Grahaabhivutabala <sup>[56]</sup>
			Rebati Graha <sup>[57]</sup>
			Jwarmukti Purvarup <sup>[58]</sup>
			Purishaja Krimi <sup>[59]</sup>
		Vida bhed	Upadrava of Pramaha (Pitta-anubandha) [60]
			Pittaja Masurika <sup>[61]</sup>
			Krikalasakdamsta <sup>[62]</sup>
		Sithila (broken-semisolid)	Raktarsa (Slesmaanuvandha)[63]
		Drava (watery)	Vataja Grahani <sup>[64]</sup>
			Pittaja Grahani <sup>[65]</sup>
			Samgraha Grahani <sup>[66]</sup>
			Pittaja Arsa <sup>[67]</sup>
			Talukantak <sup>[68]</sup>
		Atisara <sup>[69]</sup>	Pittaja Atisara <sup>[70]</sup>
		(watery stool)	Asadhyalaksna of Arsa <sup>[71]</sup>
			Visuchika <sup>[72]</sup>
			Avyantarkrimilaksana <sup>[73]</sup>
			Mrid-vaksanaja Pandu <sup>[74]</sup>
			Asadhyalaksana of Pandu <sup>[75]</sup>
			Rajyaksma and its Asadhyalaksana <sup>[76]</sup>
			Pittaja Madatwaya <sup>[77]</sup>
			Pittaja Udar <sup>[78]</sup>
			Asadhyalaksana of Udar <sup>[79]</sup>
			Agni-visarpa <sup>[80]</sup>
			Granthi Visarpa <sup>[81]</sup>
		PL. RA	Ksataja Visarpa <sup>[82]</sup>
		USHDHAI	Putanagraha <sup>[83]</sup>
		The same of the sa	Andhaputanagraha <sup>[84]</sup>
			Sitaputanagraha <sup>[85]</sup>
			Jangam visa laksana <sup>[86]</sup>
			Dusi visa laksana <sup>[87]</sup>
			Luta visa damsalaksana <sup>[88]</sup>
			Sutikaroga <sup>[89]</sup>
Т	Presence of	Amayukta	Grahanisamanyalaksana <sup>[90]</sup>
	mucous	(inadequately processed)	Vataja Atisara <sup>[91]</sup>
		(madequates) processed)	Vatik Grahani <sup>[92]</sup>
			Kaphaja Grahani <sup>[93]</sup>
			Samgraha Grahani <sup>[94]</sup>
			Pittaja Arsa <sup>[95]</sup>
		Pichaanugata	Vataja Arsa <sup>[96]</sup>
		Slesma/Kaphayukta	Slesmaja Atisara <sup>[97]</sup>
		(mucous mixed)	Kaphaja Pravahika <sup>[98]</sup>
			Kaphaja Grahani <sup>[99]</sup>
			Kaphaja Arsa <sup>[100]</sup>
			Mritvaksanaja Pandu <sup>[101]</sup>
			Asadhyalaksana of Pandu <sup>[102]</sup>
		Picchila (sticky)	Samgraha Grahani <sup>[103]</sup>
			Amayuktapurish <sup>[104]</sup>
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Presence of blood	Raktayukta	Sokaja Atisara <sup>[105]</sup>
		Amaja Atisara <sup>[106]</sup>
		Prabahika (Raktaja) <sup>[107]</sup>
		Vataja Arsa <sup>[108]</sup>
		Mritvaksanaja Pandu <sup>[109]</sup>
		Asadhyalaksana of Kamala <sup>[110]</sup>
		Raktarsa (Slesma-anuvandha)[111]
Special characters	Varahasneha/Mamsambusadrisha	Sannipataja Atisara <sup>[112]</sup>
•	(fat of wild boar/water in which flesh is	
	washed)	
	Kakantikprakasam	Sokaja Atisara <sup>[113]</sup>
	(resembling seeds of Gunja)	
	Vasabha (fat)	Kaphaja Arsa <sup>[114]</sup>
	Hana (bat)	D
	Usna (hot)	Pittaja Arsa <sup>[115]</sup>
	Sita (cold)	Slesmaja Atisara <sup>[116]</sup>
	Situ (colu)	Samgrahagrahani <sup>[117]</sup>
		Raktarsa (slesma-anuvandha) <sup>[118]</sup>
		naktarsa (stesma-anavanana).
	Snigdhapurish (fatty)	Samgraha Grahani <sup>[119]</sup>
		Raktarsa (Slasma-anuvandha) <sup>[120]</sup>
	Sandra purish	Kaphaja Atisara <sup>[121]</sup>
	Phenayukta	Vataja Atisara <sup>[122]</sup>
	(frothy)	Vatajagrahani <sup>[123]</sup>
		Vataja Arsa <sup>[124]</sup>

#### **CONCLUSION**

Characters of stool vary significantly from normal to different pathological conditions. Study of these characters of stool is an important tool for diagnosis of a disease. In absence of advanced procedure of stool examination in Ayurveda, there is an urgent need to evolve a scientific clinical study of stool in accordance with modern pathology as well as keeping intact the Ayurvedic principles. The approach which has been taken in this present study will be very much helpful in this situation. The proposed parameters of stool examination in this study and their clinical interpretation will be very much useful for both students and professionals. But as Acharya Carak has once mentioned, characters of urine/stool cannot diagnose a disease single handed, there is need of clinical correlation with other prodromal features (Purvarupa) and presenting features (Rupa) of each disease before making a definite diagnosis.

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