

**CRITICAL REVIEW OF UNMADGAJAKESARI RASA
A HERBOMINERAL FORMULATION**

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ABSTRACT :

Unmadgajakesari Rasa (UGK) is a well-known herbo-mineral formulation indicated in all kinds of *Unmad* and *Apasmar*. In different classics UGK has been present with different composition. Aims and Objectives: In current attempt all references were compiled and studied in terms of their composition, method of preparation, dose, adjuvant and indications and contribution of various texts regarding these formulations. Materials and Methods: References of UGK were collected from various available classical texts, some dissertations, and articles from various journals were also reviewed in this attempt. Conclusion: UGK is first time mentioned in *Rasa Sanket Kalika* of 15th century AD. *Unmadgajakesari Rasa Prathama*, *Unmadgajakesari Rasa Dwiteeya*, *Unmadgajakesari Rasa Tritiyaya* are different names given to it. In all these formulations the ingredients *Parad* (Mercury) and *Gandhak* (Sulphur) remains the same, but some variations are seen in other ingredients and method of preparation. In all references *kharaliya* (trituration) method is applied but in one reference *puta* is applied.

Key words: *Khalveeya Rasayana*, *Puta*, *Unmadgajakesari Rasa*.

INTRODUCTION: Psycho neurological disorders are marked by predominant disturbances of emotions rather than detectable organic abnormalities of the brain. Schizophrenia, long considered the most chronic, debilitating and costly mental illness, now consumes a total of about \$63 billion a year for direct treatment, societal and family costs.¹ Worldwide about 1% of the population is diagnosed with schizophrenia.² Schizophrenia imposes a burden not only on the sufferers but also on their families.² More commonly the incidence (rate of diagnosis) of new cases of schizophrenia increases in the teen years, reaching a peak of vulnerability between the ages of 16 and 25 years. Men and women show different patterns of susceptibility for developing schizophrenic symptoms. Males reach a single peak of vulnerability for developing schizophrenia between the ages of 18 and

25 years. In contrast, female vulnerability peaks twice; first between 25 and 30 years, and then again around 40 years of age.²

The available treatment in modern medical science like in newly diagnosed schizophrenia atypical and typical antipsychotics, antidepressant, and anti-anxiety medication. - eg, risperidone or olanzapine, clozapine, electroconvulsive therapy (ECT). But Use of antipsychotic drugs may cause additional problems - eg, drowsiness, restlessness, muscle spasms, tremor, dry mouth, or blurring of vision, Tardive dyskinesia (TD),³ weight gain and increased incidence of type II diabetes mellitus.⁴

The disease Schizophrenia is comparable with *Manas Roga Unmad*⁵ in Ayurveda⁶. Ayurveda prefers a number of formulations to treat *Unmad*, which includes herbal, herbo- mineral and metallic preparations such as *Churna* (Powder), *Kwatha*

(Decoction), *Ashava* / *Arista* (Fermentation products), *Vati* / *Guggulu* (Tablet) preparations, *Ghrita* preparations, oil preparations, *Bhasma*/ *Rashausadhies* etc. along with *Panchakarma* and *Sattvavajaya*⁷ *Chikitsa* for the management of *Unmad*. By using these drugs either alone or as an adjuvant with antipsychotic drugs we can not only treat but also can minimize the adverse effects of the same. Among these, *Khalveeya Rasayana* are most commonly used preparations as they are easily prepared by mixing herbal and mineral drugs in specified proportions and levigating with different liquid media. *Unmadgajakesari* (UGK) is a commonly prescribed *Khalveeya Rasayana* indicated in different conditions of *Unmad*, *Apasmar*.⁸ *Attavabhinivesh*⁹ and *Gadodvega*¹⁰ etc. Thus the present study is an attempt to go through various classical references of UGK in order to have comparative better understanding of this formulation.

MATERIALS AND METHODS:

References of UGK were collected from various available classical texts of

Table no. 1: Different formulations entitled as *Unmadgajakesari Rasa* as per *Rasa yoga sagar* with reference.

S. N.	R P	Y R	BrY T	RR S	RC h	Ni R	RK a	RS K	RS S	B R	RC hi	R K	VC hi	RT S
UG K 1	+	+	+	+	+	+							+	+
UG K 2							+	+						
UG K 3				+	+		+		+	+	+	+		

[UGK1-*Unmadgajakesari Rasa Prathama*, UGK 2-*Unmadgajakesari Rasa Dwiteeya*, UGK 3-*Unmadgajakesari Rasa Tritiyaya*, RP- *Rasa Pradeep*, YR- *Yog Ratnakar*, BrYT-*BruhatYogTarangini*, RRS- *Rasa Raj Sundar*, RCh- *Rasa Chandanshu*, NiR- *Nighantu Ratnakar*, RKa- *Rasa Kamdhenu*, RSK- *Rasa Sanket Kalika*, RSS- *Rasendra Sara Sangrah*, BR- *Bhaishajya Ratnawali*, RChi- *Rasendra Chintamani*, RK- *Rasendra Kalpadrum*, VChi- *Vaidhya Chintamani*, RTS- *Rasa Tantra Sara*]

Ayurveda, some dissertations and articles from various journals were also reviewed in this attempt. These collected materials are orderly tabulated and critically reviewed.

OBSERVATIONS:

Types of UGK:

UGK as the name itself indicates that it is the herbo mineral preparation which acts as an axe to *Unmad roga* that helps in eliminating *Unmad* from its root. It is first explained in *Rasa Sanket Kalika* in 15th century. There are three references of UGK as *Prathama*, *Dwiteeya* and *Triteeya*(*Rasa Yoga Sagar*). *Rasa Raj Sundar*, *Rasa Tantra Sara* and *Yoga ratnakar* were followed *Sartha Rasa Chandanshu*. All ingredients are same and preparation method is also same. *Rasa Sanket Kalika* and *Rasa Kamdhenu* explained a unique *Puta* method. *Unmadgajankusha Rasa* is mentioned as *Unmadgajakesari Rasa Triteeya* in *Rasa Yoga Sagar*. There is no other reference which mentioned *Unmadgajakesari Rasa Triteeya*.

Variations are observed in composition of the above mentioned formulations. Table 2 summarize method of preparation.

Table no. 2: Method of preparation stated for *Unmadgajakesari Rasa* as per *Rasayogasagar*.

Sr. no.	Name of formulation	Method of preparation
1.	UGK 1	Trituration
2.	UGK 2	Trituration followed by <i>puta</i>
3.	UGK 3	Trituration, <i>puta</i> followed by Trituration

Table no. 3: Ingredients and drugs stated for levigation for *Unmadgajakesari Rasa* as per *Rasayogasagar*.

Sr. no.	Ingredients	UGK 1	UGK 2	UGK 3
1.	<i>Shodhita Parada</i>	+	+	+
2.	<i>Shodhita Gandhaka</i>	+	+	+
3.	<i>Shodhita Manashila</i>	+		
4.	<i>Shodhita Dhatura seeds</i>	+		+
5.	<i>Tamrabhasma</i>			+
6.	<i>Abharakbhasma</i>			+
7.	<i>Shodhita Vatsnabha</i>			+
8.	<i>Gomutra</i>		+	

Table no. 4: Plant origin drugs stated for levigation

Sr. no.	Drugs of plant origin	No. of levigation	UGK 1	UGK 2	UGK 3
1.	<i>Vacha</i> (Acorus calamus) Decoction	7	+	+	
2.	<i>Brahmi</i> (Bacopa monnieri) juice	7	+		
3.	<i>Shankhapushapi</i> (<i>Convolvulus pluricaulis</i>) juice	3		+	
4.	<i>Dhattura</i> (Datura metel) fruit juice	Not specified (levigation for 3 days)			+
5.	<i>Kuchla</i> (<i>Strychnos nuxvomica</i>) fruit juice	Not specified (levigation for 3 days)			+
6.	<i>Maharashtri</i> (<i>Argemone mexicana</i>) juice	Not specified (levigation for 3 days)			+

Table no.5: Animal origin drugs stated for levigation

Sr. no.	Drug of animal origin	No. of lavigation	UGK 1	UGK 2	UGK 3
1.	<i>Gomutra</i> (Cow's urine)	Not specified		+	

Dose and Anupana: The dose of *Unmadgajakesari Rasa* varies from 375mg to 1.5gm. *Goghrit* (cow's ghee) is mentioned as *Anupana* (adjuvant) in maximum texts. Details are given in table 6.

Table no. 6: Showing different Anupana and Matra of UGK from various texts

Texts	Anupana/Sahapana	Matra
SRC	<i>Goghrit</i>	1 mash (750mg)
YR	<i>Goghrit</i>	1 mash
RCh	<i>Goghrit</i>	1 mash
BR	<i>Goghrit</i>	1 mash
RRS	<i>Goghrit</i>	1 mash
RK	Equal quantity of <i>Sarshap Churna & Goghrit</i>	12 ratti (1.5gm)
RSK	Equal quantity of <i>Sarshap Churna & Goghrit</i>	12 ratti
RSS	<i>Madhu & Vacha kwatha</i>	3 ratti (375mg)
RChi	<i>Madhu & Vacha kwatha</i>	3 ratti

[SRC- *Sarth Rasa Chandanshu*, YR- *Yog Ratnakar*, RCh- *Rasendra Chintamani*, BR- *Bhaishajya Ratnawali*, RRS- *Rasa Raj Sundar*, RK- *Rasendra Kalpadrum*, RSK- *Rasa Sanket Kalika*, RSS- *Rasendra Sara Sangrah*, RChi- *Rasendra Chintamani*]

Review of some research work and published papers on *Unmadgajakesari Rasa* (UGK)

Toxicity Study:

Acute toxicity study of UGK 1 & UGK 2 is concluded that LD50 of UGK is greater than 2000mg/kg.^{11, 12}

Experimental Study:

Study concluded that UGK 1 & UGK 2 shows antiepileptic activity & antipsychotic activity. It also enhances learning and memory skills and does not produce extra pyramidal side effects.^{11, 12, 13, 14}

Research articles:

UGK 1 appears to have significant antiepileptic activity after prolonged administration.¹⁵

UGK 2 is safe up to 2000mg/kg level and has antipsychotic activity. It does not produce extra pyramidal side effect.¹⁶

DISCUSSION: *Unmadgajakesari Rasa* is a well known herbo-mineral formulation

indicated in *Unmad* and *Apasmar* as its name itself confirms the main indication is *Unmad*. It was first explained in *Rasa Sanket Kalika* of 15th century AD which is prepared by *bhavna* (trituration) followed by *puta* method. After 15th century UGK prepared by levigation method is mentioned in *Rasa Pradeep* of 16th century AD.

Maximum texts followed *Rasa Pradeep* reference. There are mainly three variants in *Unmadgajakesari Rasa*. Name of these variants are *Unmadgajakesari Rasa Prathama* (UGK 1), *Unmadgajakesari Rasa Dwiteeyaa* (UGK 2) and *Unmadgajakesari Rasa Tritiyaya* (UGK 3).

Maximum texts mentioned UGK 1. Only *Rasa Sanket Kalika* and *Rasa Kamdhenu* mentioned UGK 2. *Rasa Yoga Sagar* mentioned *Unmadgajankush Rasa* as *Unmadgajakesari Rasa Tritiyaya* (UGK 3). No other reference book shows UGK 3.

UGK1 is *Kharaliya Rasayana* and UGK 2 is prepared by trituration followed by peculiar *puta* method. *Parad* (Mercury) and *Gandhak* (Sulphur) is common ingredient which are present in all references.

UGK1 and UGK2 contain *Kajjali* (combination of mercury and sulfur). Mercury affects Central nervous system (CNS) as it easily crosses the blood-brain barrier, gets accumulated in brain thus affecting multiple cellular functions.¹⁷ Mercury readily forms covalent bond with sulphur. This property accounts for most of the biological properties of the metal. It is reported that addition of Sulfur counteracts the toxicity of mercury.¹⁸ *Kajjali* own properties as *yogavahi* (catalyst) which helps in carry other drugs to CNS and enhance the efficacy and potency of the formulation.¹⁹ The ingredients like *Manashila*, *Dhatur* seeds, *Vacha*, *Brahmi*, and *Shankhapushpi* have similar properties like *Tikta Rasa* (bitter in taste), *Ushna Veerya* (hot in potency), *Teekshna* (sharp), *Snigdha* (unctuous) *Guna* and *Kaphavatahara* (alleviate *kapha* and *vata*). All of these are individually indicated in *Unmad* and *Apasmar* in *ayurvedic* texts.

Manashila (realgar) is an arsenical compound advised for epilepsy in *ayurvedic* text.²⁰ Naveen et al. have reported the sedative hypnotic activity of realgar probably by potentiating the activity of GABA.²⁰ though the exact mechanism is unclear.

Brahmi exerted neuroprotective effect by reversing the alterations in glutamate receptor binding and NMDA R1 gene expression that occurs during epilepsy, resulting in reduced glutamate mediated excite-toxicity in the over stimulated hippocampal neurons.²¹

Pharmacological studies have been revealed that *Acorus* rhizome and its constituents, particularly α and β -asarone, possess a wide range of pharmacological activities such as sedative, CNS depressant, behaviour modifying, anticonvulsant, memory enhancing.²²

Shankhapushpi (*Convolvulus pluricaulis*) has been reported anticonvulsant and reduction in plasma phenytoin levels.²³ the two doses (100 and 200mg/kg/p.o.) of ethanolic extract of *Convolvulus pluricaulis* and its ethyl acetate and aqueous fractions on significantly improved learning and memory in rats.²⁴ Thus all ingredients act in synergism to break the *samprapti* of *Unmad* and *Apasmar*.

Rasa Saket Kalika and *Rasa Kamdhenu* mentioned a unique method of preparation trituration followed by *puta* method. This may help to release active component directly to the formulation and prevent the loss of volatile components.

The dose of UGK varies from 375 mg to 1.5 gm. Maximum texts explained 1mash dose when UGK is prepared by trituration method and 12 *ratti* (1.5gm) dose when prepared by trituration followed by peculiar *puta* method.

Goghrita (cow's ghee) is mentioned as *anupan* of UGK 1 in maximum texts. This is having *madur*(sweet) *rasa*, *shita veerya* (cool in potency), *snigdha* (unctuous) , *guru* (heavy) *guna* and *vattapittakaphahar* property (alleviate *vatta*, *pitta* and *kaphadosha*).²⁵

Equal quantity of *Sarshapchurna* is mentioned as *sahapana* of UGK 2. This is having *katu-tikta* (pungent and bitter) *rasa*, *ushna veerya* (hot in potency), *teekshna*(sharp), *snigdha guna* and *kaphavatahara* property (alleviate *kapha* and *vata*).²⁶

Review from research works depict that UGK 1 & UGK 2 has no acute toxicity. UGK 1 and UGK 2 have antipsychotic and antiepileptic activity.^{11, 12, 13, and 14}

CONCLUSION: UGK is prepared by *khalveeya* method as well as *puta* method. UGK 1 and UGK 2 is different names assigned to it by *Rasa Yoga Sagar*. *Parad* and *Gandhak* are chief ingredients of UGK. Its other ingredients are different and method of preparation is also different. It is indicated for *Unmad* and *Apasmar*.

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