



Research Article

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Approach to standardization of oil temperature in *Kati Basti* –A pilot study

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ABSTRACT

Kati Basti is a procedure done in *Panchkarma Ayurveda* Clinics, hospitals in which comfortably warm medicated oil is kept over the lumbosacral area for a certain period of time with the help of a specially formed frame ring prepared from black gram dough. *Kati Basti* is highly effective in the management of pain but difficulty in positioning and chances of burn due to warm oil used is a big drawback in performing the procedure. The temperature in *Kati Basti* pool is tried to be kept uniform throughout the procedure by replacing the oil by warm oil. In case of *Kati Basti* the temperature of oil used should be *Sukhoshna* (comfortable to the patient) which is a subjective perception of heat. There is a need to standardize the optimum temperature of the oil pooled in *Kati Basti* so that it would be very easy for the therapist to avoid the burn to himself and to the patient. This study was performed with the aim to standardize the comfortable tolerable temperature of *Kati Basti*. Data of 50 patients undergoing minimum of 7 days of *Kati Basti* between the ages 20 to 75 years were selected irrespective of sex, disease, duration and referring consultants. Average maximum variation during the procedure was found to be of 3 degree Celsius. The study found the average temperature of 43 degree may be favorable for *Kati Basti* and gives valuable information about possible temperature variations.

Keywords: *Kati Basti*, Temperature, *Sukhoshna Taila*, Standardization.

INTRODUCTION

Kati Basti is a procedure done in *Panchkarma Ayurveda* Clinics, hospitals in which comfortably warm medicated oil is kept over the lumbosacral area for a certain period of time with the help of a specially formed frame ring prepared from black gram powder^[1]. *Kati Basti* also considered as *Bahya Sthanik Basti* as a part of classification of *Basti*^[2] is a misnomer. *Kati Basti* relieves pain, stiffness and swelling associated with arthritis and other painful conditions^[3], pacifies the morbidity of *Vata* and *Kapha* in the affected joints, muscles and soft tissues, causes sweating and brings about lightness and good health in the affected joints, muscles and soft tissues. *Kati Basti* is highly effective in the management of pain but pain and difficulty in positioning is a big drawback in performing the procedure. The oils generally are heated up to a tolerable temperature and pooled over the painful area. The temperature should be maintained uniformly throughout the procedure^[4] (until the procedure is completed) and burns should be prevented. For this to happen, the oil from the pool is removed at regular intervals (leaving some oil in it i.e. oil should not be completely removed) and replaced by reheated warm oil (on the other side, simultaneously oil is passively heated). The methodology used for performing various *Panchkarma* procedures differs widely from one treatment centre to other and there are considerable variations in accuracy and substances used. In many centers in place of traditional use of ring of black gram powder a *Kati Basti* ring is used of varied materials. So the uniformity of the procedure is also lacking. In case of *Kati Basti* the temperature of oil used should be *Sukhoshna* (comfortable to the patient) which is a subjective perception of heat. We don't have the defined objective parameter regarding the temperature of particular oil. Although our practice of subjective perception of heat sounds practically scientific as perception of heat varies between individuals. By following standard procedure of *Kati Basti* incidence of Burn can be prevented. Discomfort due to prolonged lying is minimal. There is a need to standardize the optimum temperature of the oil pooled in *Kati Basti* so that it would be very easy for the therapist to avoid the burn to himself and to the patient. This study was performed with the aim to standardize the comfortable tolerable temperature of *Kati Basti*.

MATERIALS & METHODS

The study was conducted in the department of *Panchkarma*, National Institute of *Ayurveda*, Jaipur where *Kati Basti* procedures are performed daily in average more than 30. *Kati Basti* is the most common type of

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Bahya Sthanik Basti done in the department. 50 patients were taken randomly who approached to *Panchkarma* unit for *Kati Basti* during the study period. Patients were selected during the month of April to June 2017, procedures posted between 10- 12 hours. Patient between the ages 20 to 75 years were selected irrespective of sex, disease, duration and referring consultants. Only the data of patients who had completed a course of 7 days of *Kati Basti* was considered for the study to find the drop out due to difficulty in positioning and unwanted burn. Each Patients *Prakriti* was recorded. Recording of temperature by digital thermometer was done and keeping the records of data was done at 2 time points; at the starting when we pooled the ring with freshly warmed oil and when we were about to change the oil to maintain uniform temperature. Classification, analysis and interpretation of the measured data was done. Only the new patient's data were considered. Only data of the patients who completed the therapy for 7 days or longer were considered to find any burn or difficulty in procedure. Reading of temperature was done by pen type Digital Thermometer with features of selectable Range: -40° to 250°C / -40°F to 482°F, Resolution: 0.1°C / 0.1°F, Accuracy: ±1.5% and Sampling Time: 2.0 Seconds.

Procedure

Patients recommended for *Kati Basti* were initially advised to lie in *prone position* and then a *Kati Basti* ring was made with black gram dough prepared from black gram powder 200-400 gms and warm tolerable *Dashamula Taila* heated passively was poured in the ring after confirming that oil is *Sukhoshna* (tolerable and comfortable to patient). Initially the oil is poured on the inner border of the *Kati Basti* ring to avoid any unexpected discomfort due to heated oil. Care was taken to prevent any leakage of oil. One set of reading was taken immediately after the warmed oil was pooled and uniform temperature was maintained in the ring. Another set of temperature reading was taken when reheated oil was about to be changed to maintain uniformity of temperature. Temperature variations were recorded and an attempt was made to maintain Uniform temperature throughout the process by replacing warm oil. The patient was observed for any event of difficulty and burns within the duration of 7 days treatment. Single day recording of the temperature was done and temperature tolerance of every new patient was only included. Temperature variations during consecutive days were not considered in study. The oil was kept for 30-40 minutes by the therapist. As the procedure was done by the therapist reading of the temperature was taken with digital thermometer without disturbing or modifying the standard procedure of *Kati Basti*. No any specific guidance were given to patients neither any specific intervention was done. Only the reading of temperature of the oil in the pooled ring was taken by dipping the tip of the thermometer in the pooled oil while the prescribed *Kati Basti* procedure was done by therapist as his routine process. [Figure:1, Recording of Temperature in *Kati Basti*]



Figure 1: Recording of Temperature in *Kati Basti*

RESULT

Among patients considered for study 19 were female and 31 were male. The mean age for enrolled patients was 51.2 years (maximum = 75 years, minimum = 23 years). Immediately after adding the warmed oil the maximum temperature observed was 46.3°C and minimum was 39.8°C which was considered as starting temperature. Just before changing the warmed oil to maintain uniform temperature the maximum temperature recorded was 43°C, and minimum temperature recorded was 37.8°C was considered as changing temperature. The mean temperature was 42.99 when warmed oil was added in the *Kati Basti* oil pool. Slight higher temperature tolerance was observed in male than female and *Kapha, Vata Pradhan Prakriti* people. Different temperature variations are shown in Table No: 1, 2, 3 and 4.

Table 1: Temperature variations of pooled oil during *Kati Basti*

Temperature	Maximum	Minimum	Mean	Std Deviation	Std Error
Starting	46.3	39.8	42.99	1.36	0.19
Changing	43	37.8	39.98	1.04	0.17

Table 2: Temperature variations of pooled oil during *Kati Basti* in Female Patients.

Temperature	Starting	Changing
Maximum	44.5	41.1
Minimum	39.8	37.8
Average	42.5	39.3

Table 3: Temperature variations of pooled oil during *Kati Basti* in Male Patients.

Temperature	Starting	Changing
Maximum	46.3	43
Minimum	40.9	39
Average	43.3	40.3

Table 4: Temperature variations of pooled oil during *Kati Basti* according to *Prakriti* of Patient.

<i>Prakriti</i>	Number of Patients	Starting Temperature	Changing Temperature
<i>Vata pradhan</i>	1	44.4	41.1
<i>Pitta Pradhan</i>	1	41.8	40.3
<i>Kapha Pradhan</i>	1	44.4	41.1
<i>Kapha Pradhan Vata</i>	14	43.32	39.9
<i>Vata Pradhan Kapha</i>	7	43	40.17
<i>Vata Pradhan Pitta</i>	5	42.94	39.92
<i>Pitta PradhanVata</i>	9	43.11	40.17
<i>Pitta PradhanKapha</i>	9	42.34	39.45
<i>Kapha PradhanPitta</i>	3	42.53	40.16

Position difficulty was observed in 8 patients but was milder in nature and no need for discontinuation of therapy. Some form of slight quick response to heat was observed during poring the reheated oil in 4 cases but no any occurrence of burn was observed.

DISCUSSION

Kati Basti is a commonly utilized intervention in *Ayurveda* clinics and *Panchkarma* units of *Ayurveda* hospitals within India and abroad. Although the external therapies like *Kati Basti* are very safe and simple in understanding but there are chances of burn if little mistake is done. Current literature on the temperature tolerance of *Kati Basti* is either limited or absent. In many parts of the country and abroad many modifications in the *Kati Basti* have been done. The traditional ring is being replaced by acrylic, metallic type or some short of materials. In traditional ring if the starting temperature of the poured oils is high the dough ring immediately maintains the uniformity but the metallic or acrylic cannot do so. The temperature is a perception of heat which may vary between individuals, therapists and there may be chances that one may tolerate higher temperature due to regular exposure to heated oil. A study of this nature was proposed to add about the temperature difference that might be associated with *Kati Basti*. The initial temperature of the oil may vary due to the first contact with black gram ring. In this study temperature of the oil was recorded maintaining the uniform temperature after required amount of oil is pooled in *Kati Basti* ring. A slow reduction in temperature occurred and the oil was refilled. We didn't had specific data so we relied on therapist's experience and on the patients response to confirm the temperature. Such things might change with season, geographical location and nature of patient. It is therefore difficult to interpret clearly if any temperature tolerance and *Prakriti* or age exists. The study did not observe all the patients enrolled in *Panchkarma* department for *Kati Basti* due to limitation of the study. Thus only the data of patients who continued for 7 days or more, *Kati Basti* was considered for study. The patients were observed just before and during the *Kati Basti* session and no any special instructions were given except the advices given to him/ her by the concerned consultant. As the patients observed under the study were not instructed for any specific protocol for their *Kati Basti*. A controlled study with large sample numbers therefore would be required to find other aspects and also confirm the inferences observed in present study. This study gives us valuable information about possible temperature variations in patients receiving *Kati Basti*.

CONCLUSION

Although temperature of oil is supposed to be uniform during the procedure but average maximum variation was 3 degree Celsius. Without controlled study with large sample numbers it is difficult to interpret temperature variations with *Prakriti*, age, sex and other

factors. The study found the average temperature of 43 degree may be favorable for *Kati Basti* and gives valuable information about possible temperature variations.

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Conflict of interest – Authors have no conflict of Interest.

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