

**EFFICACY OF *DARVI MADHUK SIDDHA TEL (OIL)* IN STRIAE GRAVIDARUM**

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**ABSTRACT**

Woman in 21<sup>st</sup> century compares herself with delicate flowers and emphasizes her beauty and femininity. During pregnancy, woman has to face many cosmetological changes such as striae gravidarum (SG) i.e. *Kikkisa* which is also called as stretch mark. SG is a pregnancy disorder and develops from 7<sup>th</sup> month of pregnancy. They are tiny tears on skin which produce *Kandu* (itching), *Vidah* (burning sensation) and *vaivarnya* (discoloration).

The aim of this study was to observe the preventive as well as curative effect of Darvi Madhuk Siddha Tel. The drug was prepared from *Darvi* [*Berberis aristata*], *Madhuk* [*Glycerrhiza glabra*] with classical method of oil preparation described in *Sharangdhar Samhita* and applied locally as *Mrudu Abhyanga* from onset of 7<sup>th</sup> month of pregnancy upto delivery. Total 60 patients participated in this study and were divided into two groups. First observation was made on 7<sup>th</sup> day then on every 15<sup>th</sup> day till delivery and significant results were found.

**KEY WORDS:** *Kikkisa*, Striae Gravidarum, SG, *Ayurveda*, *Abhyanga*

**INTRODUCTION**

About 70-90% of pregnant women by third trimester develop stretch marks i.e. striae gravidarum (SG) over the abdomen<sup>1</sup>. The causes of SG are unknown. During pregnancy due to growing foetus, there is increased abdominal girth. This mechanical stretching of the skin along with hormonal (adrenocortical hormones, oestrogen, relaxin) changes<sup>2</sup> may cause striae that are visible as red or silvery white streaks on the skin surface. These stretch marks occur in the dermis. They can occur when the structural protein i.e. collagen and elastin that binds the skin is overstretched. Collagen is the connective tissue that binds skin's structure together while elastin is a structural material that gives elasticity. When skin is stretched, the elastin and collagen fibres

reach tensile capacity, weaken and ultimately fail resulting in tears in the dermal skin layers. Ratree J-orh *et al* reported the gestational age for the onset of SG is 24.6 weeks.<sup>3</sup>

Charaka has mentioned that *sthanvaigunya* occurs during 7<sup>th</sup> month of pregnancy due to overstretching of skin of abdomen and circulating *doshas* which gets accumulated (*Sthansanshray*) in stretched skin and produce *Kikkisa*<sup>4</sup> i.e. SG and symptoms like itching, burning sensation, discoloration<sup>5</sup>. Now a day's many products like Glycolic acid, Olive oil, Castor oil as well as many procedures which are highly expensive such as Dermabrasion, Laser therapy, Plastic surgery are available to prevent stretch marks during pregnancy. Thus the treatment which is less expensive, the drugs which

are easily available and useful for cosmetic purpose, we selected *Mrudu Abhyanga* of *Darvi-Madhuk Siddha Tela* (DMST) which is proved to be prophylactic. In cases of SG, the drug was found to be helpful to pacify the symptoms as well as bringing back the normal complexion. Thus the drug is useful not only as preventive measure but also it proves to be curative.

## MATERIALS AND METHODS

After clearance from Institutional Research committee (2006), clinical trials were carried out in Dept. of Prasutitantra of Seth Tarachand Ramnath Ayurvedic Hospital. n= 60 pts were selected randomly from Outdoor and Indoor patients Dept. Informed consent was obtained from every patient. Proper history of patient was taken. Systemic and local examination as well as investigations of the patient were done.

**INCLUSION CRITERIA:** Patients who were primigravidae and having abortion before 24 weeks with complaints of striae, with or without symptoms of itching, burning sensation and discoloration were selected.

**EXCLUSION CRITERIA:** Multiparity, Pregnancy with Diabetes, Polyhydramnios, Skin diseases, Multiple pregnancies, Pregnancy with Fibroid were excluded from the study.

**GROUPINGS:** In group A, 30 pts were selected. In this group, local application i.e. *Mrudu Abhyanga* (massage) of DMST was done. 1-3 ml twice daily for 3-4 minutes from onset of 7<sup>th</sup> month of pregnancy till delivery. In group B, 30pts were selected. In this group only observation was done without any local application from onset of 7<sup>th</sup> month of pregnancy till the delivery. Follow up was done on 7<sup>th</sup> day then on every 15<sup>th</sup> day till delivery in both the groups.

**ASSESSMENT OF SIGNS AND SYMPTOMS:-** The symptoms as per patient's complaint and the findings are tabulated in the **table 1** before, after and during the treatment. Observations were made with the use of tables and graphs. Statistical analysis was done for the efficacy of *Darvi Madhuka Siddha Tel* in SG. Statistical analysis done by SPSS software version 10 ( $X^2$  test and t test) and statistical significance was set at  $P < 0.05$ .

## RESULTS

After starting the treatment it was observed that the mean gestational age (by USG) at which striae appeared was 31.62 weeks in group A and 28.47 weeks in group B. The statistically significant difference seen in group A and Group B is  $p < 0.0001$  which shows that development of striae was delayed in group A as compared to Group B (**Results shown in table.2**) Due to DMST, Patient got immediate relief from itching i.e. on 7<sup>th</sup> day and complete relief upto term as compared to Group B. (**Results shown in table 3**). At the end of 9<sup>th</sup> month, in Group A, 5 patients had no striae and in rest of the patients, the striae appeared were less severe as compared to Group B where there was no patient found without striae and their severity also increased. (**Results shown in table 4**). The area on abdomen on which striae developed was the area of discoloration. This discolored area was categorized into 3 types of colors i.e. white, light brown and brown. In present study, the color of skin that is white was seen more in group A which was irrespective of color of the skin of the patient. Thus there was statistically significant difference seen between group A and Group B i.e.  $p < 0.0001$  (**Results shown in table 5**).

## DISCUSSION

Many other combined drug formulations as well as single drugs are described in the texts for the treatment of *Kikwisa*. In the present research study the drug was formulated with the help of *Darvi – Madhuka* as per classical text<sup>4</sup>.

The statistical analysis shows that in Group A development of striae was delayed as compared to Group B due to snigdha guna of *Madhuka* and *Tila Tel* helps to maintain elasticity of the skin. *Kandu* (Itching) is said to be the main symptoms of *kapha dosha*<sup>6</sup> along with *Vata* and *Pitta dosha*. *Darvi* has *Kandughna*(anti-itching) property<sup>7</sup> *laghu, ruksha guna, ushna virya, katu vipaka* and *strtogamitva* acts as *kandughna* by removing *kleda* and *kapha*. *Madhur* and *snigdha* properties of *Madhuka* helps to decrease *vata*. The properties like *Madhur ras* and *shita virya* subside *pitta* and thus *Madhuka* acts as *kandughna*. *Tila Tel* also acts as *kandughna* by maintaining *snigdhatva* of skin. The colour of striae i.e. white, was seen more in Group A than Group B. *Madhura rasa, vipaka* and *shita virya* of *Madhuka* acts as *varna prasadana* i.e. increasing *kanti* (lustre). *Tila Tel* acts as *varnyakar* and *sthayryakar* ( stability)<sup>8</sup>. These proper-

ties are responsible for the maintenance of *kanti* (lustre) and elasticity of skin. In this study *Mrudu Abhyanga* with DMST is applied i.e. application of oil with gentle pressure which is limited up to the skin. No excessive or deep pressure is applied. Hence there is also no chance of stimulation of uterus and preterm labour.

Studies have shown that *Mrudu Abhyang* (massage) is helpful to remove dead cells of skin, improve the texture of skin by preventing the dryness and cracking of the skin<sup>9</sup> hence this drug is found effective in preventing stretch marks and it maintains the elasticity of the skin. Massage also has been shown to improve the skin barrier function<sup>10</sup> Sermin Timur *et al* reported in their study that the almond oil is more effective in the massaging than in the non massaging group<sup>11</sup>

## CONCLUSION

It is concluded that the development of striae is prolonged due to DMST. DMST is found to be very useful in relieving itching, the striae did not appear and if appeared they were mild and colour of striae remains white

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**Table 1: Assessment of signs and symptoms**

Grades →		Absent	Mild	Moderate	Severe
Symptoms ↓		(0)	(+)	(++)	(+++)
Itching		No Itching	1-2 episodes of itching daily	4-6 episodes of itching daily	8-10 episodes of itching daily
Striations of skin	Abdomen	Absent	Striae present in 2 or less than 2 quadrants	Striae present in 2-4 quadrants	Striae present in all 6 quadrants
	Thighs	Absent	Striae present in upper part	Striae present in upper, middle part	Striae present in upper, middle and lower part
Area of discoloration	Abdomen	Absent	Present in 2 or less than 2 quadrants	Present in 2-4 quadrants	Present in all 6 quadrants
	Thighs	Absent	Present in upper part	Present in upper & middle part	Present in upper, middle and lower part
Vidiah (Burning sensation)		Absent	Mild	Moderate	Severe

**Table 2: Comparison of Striae at GA by USG study groups**

Group	Striae at GA (Wks)	t Value	P Value
	(Mean ± SD)		
A (n=30)	31.62 ± 1.93		
B (n=30)	28.47 ± 0.92	8.09	<0.0001

**Table 3: Comparison of Itching in Gr. A and Gr. B**

Grade	Gr. A					Gr. B				
	Day-1	Day-7	Day-15	Day-30	Term	Day-1	Day-7	Day-	Day-30	Term

								15		
<b>0</b>	0	2	16	20	27	0	0	0	0	<b>0</b>
<b>+</b>	9	23	13	10	3	13	8	4	2	<b>0</b>
<b>++</b>	19	4	1	0	0	14	17	21	22	<b>21</b>
<b>+++</b>	2	1	0	0	0	3	5	5	6	<b>9</b>
<b>Total</b>	30	30	30	30	30	30	30	30	30	<b>30</b>
<sup>2</sup>		18.24	34.93	41.05	51		1.98	6.67	10.84	<b>17.4</b>
<b>P Value</b>		<b>&lt;0.001</b>	<b>&lt;0.001</b>	<b>&lt;0.001</b>	<b>&lt;0.001</b>		<b>&gt;0.05</b>	<b>&gt;0.05</b>	<b>&lt;0.001</b>	<b>&lt;0.001</b>

Gr. A Vs. Gr. B: Day 1:  $\chi^2 = 1.69, P > 0.05$ , Day 7:  $\chi^2 = 19.97, P < 0.0001$ , Day 15:  $\chi^2 = 49.24, P < 0.0001$ , Day 30:  $\chi^2 = 53.33, P < 0.0001$ , Term:  $\chi^2 = 60, P < 0.0001$

**Table 4: Comparison of striations of skin (Abdomen) in Gr. A and Gr. B**

Grade	Gr. A					Gr. B				
	Day-1	Day-7	Day-15	Day-30	Term	Day-1	Day-7	Day-15	Day-30	Term
<b>0</b>	30	29	25	18	5	30	20	5	0	<b>0</b>
<b>+</b>	0	1	5	12	19	0	10	24	10	<b>0</b>
<b>++</b>	0	0	0	0	6	0	0	1	19	<b>0</b>
<b>+++</b>	0	0	0	0	0	0	0	0	1	<b>30</b>
<b>Total</b>	30	30	30	30	30	30	30	30	30	<b>30</b>
<sup>2</sup>		0	3.49	12.60	42.86		9.72	42.86	60	<b>56.07</b>
<b>P Value</b>		<b>&gt;0.05</b>	<b>&gt;0.05</b>	<b>&lt;0.01</b>	<b>&lt;0.001</b>		<b>&lt;0.05</b>	<b>&lt;0.001</b>	<b>&lt;0.001</b>	<b>&lt;0.001</b>

Gr. A Vs. Gr. B: Day 1:  $\chi^2 = 0, P > 0.05$ , Day 7:  $\chi^2 = 7.12, P > 0.05$ , Day 15:  $\chi^2 = 26.78, P < 0.0001$ , Day 30:  $\chi^2 = 38.18, P < 0.0001$ , Term:  $\chi^2 = 60, P < 0.0001$

**Table 5: Comparison of colour of Striae in Study groups:**

Colour	Gr. A	Gr. B
<b>No</b>	5	<b>0</b>
<b>White</b>	17	<b>5</b>
<b>Brown</b>	6	<b>10</b>
<b>Light Brown</b>	2	<b>15</b>
<b>Total</b>	<b>30</b>	<b>30</b>

Abdomen: Gr. A Vs. Gr. B:  $\chi^2 = 22.49, P < 0.0001$

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