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Role Of Ati Bala (*Abutilon Indicum*) In Garbha Sthapaka And Garbha Vruddhikara Prabhava With Growth Retarded Symptoms Of Pregnant Women

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ABSTRACT

The present study was conducted to find out the effect of AtiBala (Abutilon indicum) as a single drug for Garbhasthapakaprabhava and Garbhavruddhikaraprabhava in pregnancy in growth retarded symptoms. Sixty pregnant women of a second and third trimester were included and they were divided into two groups. The effect of Ati Bala 'choorna' was compared to the choorna combination of Amalaki, Godanthi and Garbhapalarasa (Amalaki group). The role of Ati Bala in maintaining Garbha sthapaka and Garbha vruddhikaraprabhava was more than the combination of Amalaki, Godanthi and Garbhapalarasa, which was statistically significant.

Key words

Ati Bala, Abutilon indicum, garbhastapaka prabhava, garbha vruddhikara prabhava, abortion, miscarriage

INTRODUCTION

Health of mother and baby are important to take care sometime a lapse may lead to death any one of both minimum health care may lack many times though it is their right. More than half a million women die each year as a direct result of pregnancy related complications.

The major constraint on the fetal growth is the poor intake by the mother. Lack of a well balanced diet has serious implications on the health of the mother and fetus especially at the crucial period of development of fetus. In recent years alert was served on the maternal health and nutritional status in the developing countries especially in India where morbidity rates for both mother and infants have been consistently higher. Many times abortions or birth with low weight babies is seen. It was shown that factors contributing to low birth weight in a developing country include, in order of importance, low maternal caloric intake or inadequate weight gain during pregnancy, low pre pregnancy weight, short stature and malaria.

For many women, gynecologists serve as specialists and primary care provider (Hoffman 2012). Gynecologists in Ayurveda accept Ati Bala (Abutilon indicum) as an important drug in combinations with other herbs for perceiving normal pregnancy or in case of intra uterine growth retardation and general weakness. Since Ati Bala (Abutilon indicum) one of the best drug which is having fetus promoting, bulk promoting and tonic effect (anabolic effect) (Charaka Sutra 4), we have chosen this drug for trial in the present study. The present study was designed to find out Garbha Sthapaka and Grabha Vruddhikara Prabhava of Ati Bala in growth retarded symptoms in pregnancy.

MATERIALS AND METHODS

Separately powder of Ati Bala, Amalaki, Godanthi and Garbhapala Rasa were prepared in pharmacy division of the Institute of Post Graduate Teaching and Research, Gujarat Ayurveda University.

Sixty pregnant women who reported to the Ante Natal clinic unit in Hospital of Institute for Post Graduate Teaching and Research in Ayurveda, Jamnagar, fulfilling the criteria for diagnosis of growth retarded symptoms (GRS) were included in this study. Criteria for this were a mother whose weight and the uterine fundal height less than corresponding expected value in relation to the maternal height and gestational age in second and third trimester of pregnancy and they were selected under the study and randomly divided into 2 groups.

Group 1: Thirty women were included in control group. They were treated with an herbal compound containing Amalaki, Godanthi and Grabhapala Rasa In the form of Choorna (powder) which is the drug regularly prescribed to pregnant women in this institution. The dosage was 1.5g divided in 3 equal parts, thrice a day with luke warm water for the duration of 12 weeks.

Group 2: Thirty pregnant women were included in Study group. They were treated with Ati Bala. The dosage of drug was 9g per day in three equally divided doses, with luke warm water for the duration of 12 weeks

All pregnant women were gives advices on 1st visit as well as subsequent. They were advised to visit outpatient department once a week, till delivery.

Criteria for Diagnosis and Assessment of GRS symptoms, the following were included in the study

1. By measuring maternal
   a. Uterine height
   b. Maternal weight
   c. Abdominal Circumference

2. By finding Ultrasonographical values of following parameters before during and after treatment
   a. Biparietal diameter (BPD)
   b. Femoral Length (FL)
   c. Abdominal Circumference (AC)
   d. Head Circumference (HC)
   e. Volume of Amniotic Fluid (AFV)

3. Routine investigations – before and after treatment Hb%, WBC, ESR, urine and stools were advised and blood group ABO and Rh before treatment

Statistical analysis ('t' test) was done for comparison using results of before and after treatment studies and also between the treatment on each clinical and diagnostic parameters in control and study groups.

RESULTS

The patients included in groups 1& 2 were belonging to the age of 18-38 years (mean 25.04 years). Many pregnant women were belonging to 24 to 26 years (40.45%). They were mainly from uneducated (31.51%) or educated up to pre secondary level (44.2%). The hemoglobin level varied from 8-13.2 gm% in both groups. The complaints reported by patients at their first visit were backache, loss of appetite, pain in abdomen, nausea, vomiting, weakness, burning micturition and white discharge. The results observed by employing the general examination (Table 1), Ultrasonography (Table 2), hematological (Table 3&4) and urine examination (Table 5) were summarized. Statistically significant results were seen in case of general examination (Table 1) and ultrasonography study (Table 2).

Table 1: The results of a comparative study of USG observations between Group 1 & 2

	Trimester	Group 1 mean	Group 2 mean	During treatment group 1 V/S 2		After treatment group 1 V/S 2		Overall between group 1 V/S 2	
				't'	p	t'	p	T	p
BPD	Second	17.62	20.48	0.02	Ns	0.79	0.5	0.30	0.8
	Third	12.25	15.42	2.75	0.01**	0.77	0.5		
HC	Second	64.42	79.81	0.20	0.9	-0.58	0.6	-0.00	-
	Third	35.15	43.98	1.97	0.1	0.52	0.7		
FL	Second	14.25	26.45	0.02	Ns	0.04	Ns	-1.21	0.3
	Third	10.2	20.82	0.08	Ns	-1.1	Ns		
AC	Second	54	63	-0.30	0.8	-0.14	0.9	-0.92	0.4
	Third	40.1	58.24	-0.47	0.6	-0.56	0.6		
HC/AC	Second	0.002	0.09	0.11	Ns	1.04	0.4	1.59	0.2
	Third	-0.019	-0.175	1.72	0.1*	1.37	0.2		
FL/AC	Second	0.04	0.073	1.47	0.2	1.33	0.3	2.46	0.02*
	Third	0.04	0.094	3.44	0.01**	2.07	0.05*		
Fetal weight	Second	0.168	0.125	-1.02	0.4	-2.06	0.1	-2.88	0.04*
	Third	0.806	1.264	-1.83	0.1	-2.49	0.02*		
AFV	Second	-1.8	2.24	2.58	0.02*	3.49	0.01**	4.49	0.001**
	Third	-1.64	0.55	3.49	0.01**	3.56	0.001**		

	Trimester	Group 1	Group 2	During treatment		After treatment		Overall treatment	
				't'	p	't'	p	't'	p
Maternal weight	Second	4.77	9.91	0.20	0.9	-0.79	0.5	-2.82	0.01**

	Third	4.89	9.68	-1.33	0.2	-2.58	0.02*		
Maternal Abdominal Circumference	Second	3.87	4.18	-1.04	0.4	-0.35	0.8	-4.25	0.001**
	Third	1.74	6.96	-1.32	0.2	-4.48	0.001**		
Uterine Height	Second	3.48	3.76	-1.63	0.2	-1.77	0.2	-1.59	0.2
	Third	2.14	4.45	-0.88	0.4	0.01	0.9		

Table 2: Difference in mean values of maternal parameters of group 1 & 2

*Significant

** Highly significant

Table 3: Results of study: Hemoglobin (gm %) and total WBC count

Groups	Before treatment (BT)		After Treatment (AT)		Difference [BT-AT]
	Mean Hbgm %	range	Mean Hbgm %	range	
1	11.11	8-13.2	10.3	8-14	0.81
2	11.08	9.5-13.5	10.73	8.2-12	0.51
	Mean WBC count in cmm	Range	Mean WBC count in cmm	Range	Difference
1	9973.44	7500-11500	10958.33	7850-11900	984.89
2	9047.22	7500-11900	9843.33	7750-12500	796.11

Table 4: Differential WBC count

Groups	Group 1		Group 2	
Differential count (mean %)	BT	AT	BT	AT
Neutrophil	69.00	69.00	68.94	66.74

Lymphocyte	27.70	25.01	26.74	29.43
Esosinophil	2.83	3.45	3.76	3.18
Monocyte	0.47	0.55	0.65	0.65
Basophil	0.00	0.00	0.00	0.00

Table 5: Results of urine examination

Group	Before treatment No of cases in %				After treatment No of cases in %			
	Albumin	Sugar	Pus cells	Epithelial cells	Alb.	Sug.	Pus	Epl
Group 1	24.0	8.0	28.0	8.0	28.57	0.00	14.28	0.00
Group 2	9.09	6.06	15.15	0.0	26.66	13.33	46.66	0.00

DISCUSSION

Pregnancy is a special event and community should treat a pregnant woman with particular care. During pregnancy a woman needs to eat and rest extra (WHO 1994). The giving birth to a healthy child is important to mother, child, family and society. Pregnancy and child birth are natural processes though they are not risk free. Giving birth to a healthy child is important to mother, family and society in general. Among Ashtanga Ayurveda, one branch was named as Kaumarabritya, where pregnant women is given very special importance. Ayurveda with vast knowledge on formation and development of pregnancy and its pathology, prescribedmany preparations by Acharyas for maintenance of healthy pregnancy and proper growth of fetus. Ayurveda prescribed herbal preparations for "Garbhasthapaka". Thus the subject of pregnancy and care of the mother and child is great important. Growth retardation was known to Ayurveda since hundreds of years. Acharya Susruta pointed out that this was due to non-availability of proper diet to the fetus or vaginal discharge (bleeding) after conception, the fetus suffered from 'sosha' (emaciation or dryness) (Su.Sha 10/41). In Susrutha (Su Sha 10/15) it was mentioned that due to affliction by 'vayu' the fetus got dried up, did not fill properly the mother's abdomen quiverd very slowly. Further quoting Vruddha Kasyapa the 'rasa' either flowed slowly or did not flow in the Rasa Vaha Nadi of fetus thus the fetus developed very slowly.

The present study showed Ati Bala was increasing the overall weight of the mother (Table 2) as well as the fetus (Table 1). AtiBala (Abutilon indicum) was well accepted as a nourishing and strength promoting drug in pregnancy. Further it has Rasayana property and fetal growth promoting action. In

group 2 before treatment between 2nd and 3rd trimester there was an increase of nearly 2kg of maternal weight. Between Groups 1 & 2 during treatment a significant difference was seen (Table 2).

Maternal Abdominal Circumference (MAC) is an external measure to understand the progress of pregnancy. A decrease in MAC could lead to the suspecion of poor intra uterine growth (IUGR), still birth or oligohydramnios. Abdominal Circumference of mother and uterine weight, showed that Ati Bala (Group 2) was highly effective to improve our features (Table 2).

When standard percentage of biparietal diameter was compared in both groups before and after treatment there was an increase in mean value. However the difference was prominent in case of Group 2. When Group 1 was compared to Group 2 during 2nd trimester, no significant difference was seen. During 3rd trimester between two groups when 't' test was done highly significant ($p>0.01$) difference was seen. The study proved Ati Bala in the given dose was superior to combination of Amalaki, Godanthi and Grbhapala Rasa (Table 1).

Head circumference of embryo is also all important measurement of evaluation IUGR (Sanders, James 1985). In both trimesters head circumference increased from prior to treatment to during and after treatment. The increase in the mean values was 64.42 mm and 35.15 mm in second and third trimester respectively. The progressive decrease from 2nd to 3rd trimester is an established fact. In the case of Group 2 also similar pattern was observed. However the values of difference of mean were higher 79.81mm and in 2nd trimester 43.98mm in 3rd trimester. The difference between Groups 1 & 2 showed the superior effect of Ati Bala on fetal growth (Table 1). Considering femur length, In Group 1 between second and third trimester no significance difference was observed. In case of Group 2 where Ati Bala was administrated to patients, the femur length development was from 28.4 mm to 54.85 mm in 2nd trimester and from 46.66mm to 67.48mm in 3rd trimester. The difference in mean values of femur length before and after the treatment in both trimesters in both groups was increased, though the increased, though the increase was slow during 3rd trimester (Table 1).

The result showed that there was a progressively increased Abdominal Circumference of fetus group 2 from 2nd to 3rd trimester before and after treatment. In both groups no significant difference was observed in either trimester. So in the case of Abdominal Circumference, that Ati Bala was beneficial to patients of growth retarded symptoms.

The necessity of calculating ratio HC/AC is mainly to identify asymmetrical IUGR HC/AC value is progressively decreasing in normal pregnancy (Hadlock et al. 1985). In case of Group 2, the decrease in the ratio value is 0.095 and -0.175 in 2nd to 3rd trimester in after the treatment of both groups (Table 1).

In this study the fetal weight was measured systematically by using USG. There was statistically significant difference after the treatment between Groups 1 and 2 ($p>0.02$) the clear indication from this comparative study between groups 1 and 2 was the drug given to patients of Group 2 was beneficial to increase the fetal mass.

Measurement of Amniotic fluid volume during pregnancy is important. 'The percentage difference between standard and observed value showed no significant change between Groups 1 and 2; the same values during treatment showed this a significant ($p>0.02$) and highly significant value (p.0.001) after the treatment. The statistical significant irrevocably prove Ati Bala is superior to Amalaki for Amniotic fluid volume (Table 1). Noticeable difference was not seen in blood and urine study (Table 3-6).

In conclusion parameters for maternal and fetal growth and development showed better results when patients were treated with Ati Bala. The clinical examination along with maternal as well as fetal parameters showed that Ati Bala was better and superior in both cases when compared with Amalaki, Godanthi and Grbhapala Rasa in case of growth retarded symptoms of pregnancy due to Garbha Sthapaka and Grbha Vruddhikara Prabhava.

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