

## **THE IMPACT OF COMPREHENSIVE ANTENATAL CARE TO REDUCE THE COMPLICATIONS DURING PREGNANCY LIKE PIH & IUGR**

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### *Abstract*

**Aim & Objective:** The Impact of Comprehensive Antenatal Care to To Reduce the Complications during pregnancy like PIH & IUGR. **Material & Methods:** 532 women attending the antenatal clinic at Neel clinic in Panvel, Navi Mumbai, India were enrolled between 18-28 Week of pregnancy from May 2015& April 2017, in prospective non-randomized, matched, interventional study. 254 Woman were enrolled in study group. 278 Woman were enrolled in control group. Women were matched for age, gravida, parity, educational, religion, and residential area. **Comprehensive Antenatal Care included:**

1. Stress management through Rajayoga Meditation (Brahma Kumaris)
2. Nutritious & Satwik Food
3. Antenatal physical & breathing exercises

Exercises, walking & Meditation were practiced by the study group from date of entry into the study until delivery. The control group walked half an hour twice a day (Standard obstetric advice) during study period. Compliance in both groups was ensured by frequent telephone calls and maintenance of a daily activity charts. **Result:** Complications such as isolated intrauterine growth retardation (IUGR) ( $p = 0.002$ ) and pregnancy-induced hypertension (PIH) with associated IUGR ( $p = 0.001$ ) were also significantly lower in the Comprehensive Antenatal care group. **Conclusion:** Stress management through Meditation as well as Exercise & nutritional management may contribute to decrease risk of isolated intrauterine growth retardation (IUGR) ( $p = 0.002$ ) and pregnancy-induced hypertension (PIH) with associated IUGR, and eventually would decrease problems in the infant, children, adolescent and Foetal origin of adult diseases. "Comprehensive Antenatal care is safe, relatively cheap to implement & would reduce the costs of long term health care."

### INTRODUCTION

A pregnancy complication is defined as a problem that arises during pregnancy and can potentially put the health of the mother, fetus or both at risk (Beers et al., 2003)<sup>1</sup>.

Some of the maternal complications are pregnancy induced hypertension (PIH) & Intrauterine growth restriction (IUGR). Reported prevalence of pregnancy induced hypertension was 6% to 8% for the USA<sup>2</sup> while for Asia it was 1.4%.<sup>3</sup> Pregnancy induced hypertension (PIH) Development of new arterial hypertension (BP systolic  $\geq 140$  mm Hg diastolic  $\geq 90$  mm Hg) after 20 weeks of gestation without proteinuria. Preeclampsia is a major contributor to maternal

and fetal morbidity and mortality. Pregnancy induced hypertension leads to fetal complications such as pre-term births and fetal growth retardation.<sup>4,5</sup> It also leads to maternal morbidities including eclampsia, nephropathy, hepatic changes, HELLP syndrome, disseminated intravascular coagulation and maternal death.<sup>6</sup> Preeclampsia is also related to cardiovascular disease in later life.<sup>7,8</sup>

Intrauterine growth restriction (IUGR) Fetus unable to reach its required growth potential for its gestational age due to some pathological inhibition Calculated using estimated fetal weight and gestational age from the ultrasound

and Doppler data. Intrauterine growth restriction (IUGR) is a when the baby is under the 10th percentile of weight for their gestational age while in the womb. There are many factors that could contribute to IUGR, some include, preeclampsia, hypertension, diabetes, abnormal placentation and cardiovascular disease. This complication, known as intrauterine growth restriction or IUGR, can cause permanent harm to a baby's health and development. The American Pregnancy Association links IUGR to pneumonia, low blood sugar, neurological disease, blood disorders and delays in motor development. Low-birthweight babies are also at an increased risk of hypoxia, or low oxygen supply, at birth.

It is not a far jump to think the reason IUGR numbers were decreased among the yoga group, was because there were significant improvements seen with the possible causing factor. While management of IUGR must be individualized for each patient, one management treatment, although not of proven benefit, is bed rest which may maximize uterine blood flow. Again, we see the benefit of Stress management through Meditation as well as Exercise in Comprehensive Antenatal care. Stress management through Meditation as well as Exercise increases blood flow which can maximize blood flow to the placenta. Decreasing maternal blood pressure dilates the blood vessels, also allowing for better blood flow to the uterus.

Psychosocial stress has been observed to be associated with maternal complications during pregnancy by several researches.<sup>9, 10, 11</sup>

Almost all women experience stress at some point during pregnancy. Mood swings and emotional disturbances are a completely normal

reaction to the physical, emotional and lifestyle changes associated with pregnancy. While normal levels of stress are unlikely to be detrimental to the health of a pregnancy, excessive stress may be detrimental to the health of an unborn child.

The etiology of these complications is not clearly understood; however, there is increasing evidence that maternal oxidative stress (Agarwal et al., 2005<sup>12</sup>; Hsieh et al., 2012<sup>13</sup>; Lappas et al., 2011)<sup>14</sup> and psychological stress (Austin and Leader, 2000<sup>15</sup>; Mancuso et al., 2004<sup>16</sup>; Nakamura et al., 2008<sup>17</sup>; Orr et al., 2002<sup>18</sup>; Roy-Matton et al., 2011)<sup>19</sup> play a strong role. Recent studies have shown yoga to be effective in reducing oxidative (Hegde et al., 2011)<sup>20</sup> and psychological stress (Chong et al., 2011<sup>21</sup>; Stoller et al., 2012<sup>22</sup>; Streeter et al., 2012<sup>23</sup>; Vancampfort et al., 2011)<sup>24</sup>.

In this preliminary study we investigated whether Stress management through Meditation as well as Exercise techniques can prevent the incidence of pregnancy complications.

Narendran et al. investigated the effectiveness of yoga during pregnancy and reported higher birth weights and fewer complications in the yoga group (Narendran et al., 2005b)<sup>25</sup>.

Stress during pregnancy is often unavoidable. However, by making healthy lifestyle choices, expectant mothers can help to prevent many of the complications associated with stress in pregnancy. Women struggling with pregnancy-related stress should avoid all harmful behaviors, such as eating disorders, smoking and drinking, to prevent the complications associated with stress. The March of Dimes also recommends relaxation techniques such as meditation and exercise to curb the effects of stress. Pregnant

women coping with anxiety should contact a counselor or primary health-care provider for help with managing emotional disturbances.

The primary objectives of this study were to assess the feasibility of using whether Stress management through Meditation as well as Exercise interventions in preventing major pregnancy complications.

(Narendran et al, 2005) <sup>26</sup>examined the effects of yoga in pregnancy and its outcomes, & concluded that an integrated approach to yoga during pregnancy is safe. It improves birth weight, decreases preterm labor, and decreases IUGR either in isolation or associated with PIH, with no increased complications. Yoga by its holistic approach to health appears to be safe in pregnancy and leads to improved outcomes.

(Kiran et al, 2005) <sup>27</sup>defines Brahma Kumaris Rajayoga as a method of autogenic relaxation with spiritual link, providing training in realization of the true self, contemplation on divine “Supreme Being” and a dialogue with the supreme. Autogenic relaxation is defined as a method for influencing one's autonomic nervous system. Kiran further refines the definition of Rajayoga meditation as a Spiritual based relaxation therapy.

(Kiran et al, 2009) <sup>28</sup>defines Rajayoga meditation as a method of meditation based on spirituality involving realization of true conscious of self, realization of attributes like peace, purity, happiness, bliss, love, power and knowledge and linking the self with “supreme Being” by contemplating on Divine Supreme.

(Gupta 2006) <sup>29</sup>defines Brahma Kumaris Rajayoga meditation is a science and art of harmonizing spiritual energy (energy of soul),

mental energy (energy of mind) and physical energy (energy of physical body), through the connection with ultimate source of spiritual energy i.e. Supreme Soul for enjoying ever healthy, ever-wealthy and ever-happy life.

(Patel and Giorgio, 2005) <sup>30</sup>insists that Rajyoga meditation is taught within the context of a lived faith complete with daily teachings, practices and lifestyle observances.

(Gupta et al, 2011) <sup>31</sup>specifies the practical experience of opening of coronary blockage with unique user friendly healthy lifestyle-comprehensive healthcare program-Rajyoga meditation, Satwik low fat high fiber balanced diet and daily morning walk with sunrise in Mount Abu open heart trial. It shows the benefits of Brahma Kumaris Rajyoga meditation lifestyle proven in angiographically documented CAD patients in the landmark research study on regression of coronary blockages and better control of hypertension, diabetes, obesity etc through healthy lifestyle-comprehensive healthcare program. Even 100% calcified blockages opened up in persons who sincerely adhered to the prescribed program. Rajyoga Lifestyle- Concept taught by Brahma Kumaris .

Life Style Changes through Holistic Approach –  
Brahmakumaris School of Thought

1. Self Identity - You do not discover your identity in as much as evolve into it. As we discard the image of the formed self, we allow the authentic self to emerge. To heal the self we need to have the right information of the self, the connection between the mind and body, various risk factors , emotional intelligence , Sleep management, Diet , exercises , medical care.

2. Self Realisation – Self Realisation takes place by being in a state of real self consciousness. When we operate our lives through false consciousness (of the body, status, gender, responsibilities which is perishable and non permanent) leads to anger, frustration, depression, insecurity, hostility, fear and life style induced disorders. Conversely, true self consciousness( of the transient being which is eternal and divine) leads to peace, happiness, love and inner strength.
3. Holistic Approach – This new holistic approach takes into consideration all the aspects of Health i.e The Spirit, The mind and The Body. It give due importance to the spiritual, emotional, mental and physical well being of the individual. It involves a proper integration of the spiritual virtues (Knowledge of Truth, purity, peace, love, happiness , bliss and power), spiritual powers (power to judge, to tolerate, to face, to judge, to accommodate, to cooperate, to withdraw, of discretion), mental energies (Positive Thoughts, Emotions, Attitudes and Memories), physical energy (Satwic Healthy Diet, YogAsanas, Exercise, Pranayam, Proper Sleep, Rest )
4. Balanced Life – When our daily routine is balanced, systematic and disciplined , it has profound benefits for a good health of the individual.

The 3 major parts of the Holistic Approach of Antenatal Care Program are

1. Emotional Intelligence through Rajyoga Meditation:

When we are emotionally not stable, it is bound to cause Stress. Stress is defined as mental state in which the internal and external pressure exceed the inner strength (coping mechanism) leading to sympathetic over activity and release of stress hormones which in turn leads to vicious cycle of mental dis-ease. When we try to understand stress, there is a very beautiful definition of “Stress”.

#### **Stress = Pressure / Resilience**

The pressure includes all those difficult situations and challenges from the outside. And resilience denotes our inner strength, to deal with those difficult situations. We cannot choose situations or people in our life, and thus we cannot really influence the percentage of pressure caused by them. But we can surely build on our inner innate self and competencies. Whenever there is challenging situation, we either react or respond. Inner strength can be increased by Rajyoga. Rajyoga Meditation is the journey inwards, a journey of self-discovery or, in fact, re-discovery. Meditation is time taken for quiet reflection and silence, away from the hustle and bustle of daily living. Taking time out enables us to come back to a centred place of being. Meditation is a state of being in that place just beyond every day consciousness, which is where spiritual empowerment begins. Spiritual awareness gives us the power to choose good and positive thoughts over those which are negative and wasteful. We start to respond to situations, rather than just reacting to them. We begin to live with harmony, we create better and happier, healthier relationships and change our lives in a most positive way. Rajyoga meditation harmonizes spiritual, mental and physical



energy, thereby increasing inner strength to lead a stress-free and healthy life. It helps individual to manage and practice positive thoughts, emotions, attitudes, memories and adhere to healthy diet, exercise, sleep, medication. Expert Rajyoga teachers from Prajapita Brahma Kumaris Ishwariya Vishwa Vidyalaya teach Rajyoga meditation in three different stages. During stage-1 (self empowerment), patients are provided with knowledge of the real identity of the self (soul) and the Almighty Authority (supreme soul) and taught to form a mental connection with the Almighty Authority to draw spiritual energy. Stage-2 . In this stage the patients are trained on how to use the powers of thoughts and to heal the self and convert and change negative emotions to positive energy. The extrinsic factors are not the reasons for causing stress. The patients are taught to respond positively to extrinsic challenging factors. They are trained to inculcate the positive mental energy thereby enhancing will power to adhere to healthy and happy lifestyle program. In stage-3 by Rajyoga meditation, they are asked to focus the inner, radiant spiritual energy on various organs of the body including the baby in utero. A meditation commentary is provided to guide the mind in a positive direction. They are encouraged to maintain an inner self (soul) conscious mental state even while engaged in day-to-day work activities. There are five steps for meditation. Step 1. Relaxation - Relaxation is about letting go of tension and stress and bringing the mind and body into a state of calm and peace ... Step 2. Concentration - Concentration allows me to use my time productively, once I have relaxed: I focus on the thoughts I choose to have ...Step 3. Contemplation - Contemplation is reflecting deeply on myself, my inner world and my values...Step 4. Realisation - Realisation is when

my understanding and feelings combine and I experience a more profound, more meaningful reality within...Step 5. Meditation - Meditation is focusing on a thought and remembering my eternal identity, and re-awakening a wonderful state of well-being ...

## 2. Diet Management –

The essential components of diet program were: what? ( Satvic vegetarian Diet), when? (As per biological clock) and how? (food that is prepared in Godly remembrance and offered to God before taking). Diet consist of fiber from oat bran, fruits, vegetables, sprouted seeds, beans, salads etc; complex carbohydrates ; proteins from soyabean and other vegetarian sources; antioxidants from sprouted seeds, fresh fruits, vegetables and nuts. Beneficial effects of the prescribed diet were explained both to the patients as well as their spouses by audio-visual means by the experts. Diet was served in silence with light music played to enhance the quality of environmental ambience. Diet charts were also provided to each patient.

## 3. Antenatal physical & breathing exercises

Physical exercises were taught by fitness specialist. The physical exercises were performed while standing, sitting, lying prone or supine on the floor. The physical exercises take each joint in the body through full verge of motion. Stretching, strengthening and balancing each body part. Internal awareness and synchronization of physical postures with breathing is considered critical and important.

## LifeStyle Changes through Holistic Approach – Brahmakumaris School of Thought

Lifestyle changes taught by Brahma Kumaris includes daily Discourse of Positive Thinking, Rajayoga Meditation practices, Satwik Food (food that is prepared in Godly remembrance and offered to God before taking) and Practice of rajyoga meditation for Soul Consciousness. At present, there is no study from the organization regarding the role or safety of RajyogaMeditation during pregnancy. This study is conducted to test the hypotheses that stress management in pregnancy using Rajyoga Meditation as a part of Integrated Antenatal Care, whether it would improve the pregnancy and childbirth outcomes. Scientific basis of the study was an attempt to study The Impact of Integrated Approach of Antenatal care to Improve the Gestational Age at Birth

## MATERIAL & METHODS

1986 women were screened for antenatal care in OPD at Neel clinic from, March 2015 to April 2017. Out of 1986 screened women 736 women registered for delivery at Neel clinic. 204 women were excluded as per exclusion criteria. 532 patients were matched for age, occupation, education, religion, residential area, socio economic status, gravida, and parity. Only 254 patients were willing to follow the comprehensive antenatal care, comparing of Satwik vegetarian diet, exercise and walking and meditation and were willing to sign the consent form were enrolled in study group. 278 patients were not willing to follow the comprehensive antenatal care were enrolled in control group. Patients who were unwilling to participate in the study group gave reason such as

3. Not able to follow Satwik diet
4. Unable to come regularly for exercise and meditation

5. Family members disliked the ideas of their Participation in the research

**The inclusion criteria** are as given below:

1. Age 18 to 35 yr
2. Any gravid (primi or multigravida), any para.
3. Second/ Third trimester (18 to 28weeks)
4. Singleton pregnancy.
5. No major obstetric or medical complications according to the prenatal check chart as detected at the time of prenatal registration.
6. Normal extremities and able to undertake physical activities
7. Able to listen, speak, read and write in Hindi/Marathi/English
8. No prior experience of practicing Rajyoga meditation.
9. Had not undertaken regular physical exercise for at least one year.

Medically high risk pregnancies developed after enrolment continued to be part of the trial and were not excluded.

## Exclusion Criteria

1. Age less than 18 or more than 35
2. Medically high risk pregnancies like Preeclampsia, heart disease in pregnancy, severe anemia in pregnancy (Hb less than 5 gms %), diabetes in pregnancy, asthma, TB, convulsive disease during pregnancy, medical renal disease.
3. Previous caesarean delivery.
4. History of previous pregnancy loss due to known chromosomal disorders, foetal malformations.
5. IVF (In vitro fertilization)

6. BOH (Bad obstetric history)
  - Previous H/O more than 1 abortion.
  - Previous H/O IUFD (Intrauterine fetal death)
7. Does not believe in the presence of Supreme Being.

The study received approval from the director of the hospital.

- The consent form was kept as separate sheet. The information was kept completely confidential. Informed consent form was filled from all the subjects participating in this study to take their consent to participate in this study and to present/publish the information collected in scientific forum, paper, and media or in any other form. The information subsequently shared/published would be without personally identifying any individual and maintaining confidentiality.
- The pregnant woman had the freedom to withdraw from the study at any point without it affecting her treatment in any way at the hospital.

Comprehensive Antenatal care included: (Physical, Mental & Spiritual Care)

1. Stress management through Rajayoga Meditation (as taught by Brahma Kumaris)
2. Nutritious & Satwik Food
3. Antenatal physical & breathing exercises

All members of the study group were asked to practice the exercises at home at least three times a week, starting after the first practice session and continuing till delivery to ensure

compliance with the research protocol. Compliance was ensured by frequent telephone calls and maintenance of a strict daily activity charts.

- They were asked to practice Rajyoga Meditation from the date of entry into the study until delivery. They were asked to meditate for 30 mins daily which could be once a day, or split into 2-3 sessions, with total duration being of 30 mins/day. The recommended timing for mediation was Amritvela (early hours of the day), Evening meditation, and meditation before sleep.
- Physical exercises were taught by fitness specialist. The physical exercises were performed while standing, sitting, lying prone or supine on the floor. The physical exercises take each joint in the body through full verge of motion. Stretching, strengthening and balancing each body part. Internal awareness and synchronization of physical postures with breathing is considered critical and important. They were asked to follow following exercises.
  1. Walking
  2. Breathing exercises
  3. Strengthening & Mobility exercises
  4. Stretching exercises
  5. Ergonomics (postural correction)
  6. Exercises before labour

Strengthening & Mobility exercises included, Ankle toe movement, Kegel's exercises, Static back, Static abdomen, Pelvic tilting exercises, Trunk rolling, Cat and camel exercises, Straight leg raising (SLR) in supine.



Stretching exercises included, back stretching exercises, Leg (Lower limb) stretching exercises, Squat position, Butterfly Exercise.

Exercises before labour included, Breathing exercises, Positions for labour, Squat position, Butterfly Exercise

Exercises had following Benefits

Pregnancy usually leaves women feeling tired; exercise gives more energy to make through the day.

Exercise allows better sleep.

Improves mood, lessens mood swings, improves self image, and gives some sense of control.

- Prepares for childbirth. Studies show shorter labor, fewer medical interventions, and less exhaustion during labor.
- Subsequently, women were asked to practice comprehensive Antenatal care that is Rajyoga meditation and physical breathing exercises at home and were revised and reviewed every 2-4 weeks during their routine antenatal visits.
- Group 2 was the control group and was comprised of those women who were living the life as they normally live with no interventions or education by the researchers. They however, received normal antenatal care and medical interventions as indicated. They were asked to walk 30 minutes twice a day (standard obstetric advice) during the

study period.

- Compliance in both groups was ensured during ANC follow up/telephone calls and strict maintenance of a weekly chart.
- Objectives that were serially measured during the antenatal visits and labour as detailed in the Case Proforma:

Pregnant women were closely monitored during their routine antenatal visits. The following variables were measured at each visit:

1. Blood pressure-a value  $\geq 140/90$  mm of hg on two separate occasions (6 hours apart).or an increase by 15mm from baseline value after 20th week were considered as pregnancy induced hypertension(PIH).
2. Ultrasound scanning to monitor foetal growth intrauterine growth retardation (IUGR) being defined as estimated weight less than the 10th percentile.
3. Doppler ultrasound of the uterine and umbilical vessels to calculate the resistance index.

## RESULT

532 Pregnant Woman were included in the analysis (see table1) for a Comparison of the subject demographic Characteristic. No Significant difference was found in any of the demographic Characteristic, between the Two Groups. Compared to the Control Group, the Interventional group (comprehensive Antenatal Care) had a Statistically Significant decrease in preterm deliveries, (table 2).

**TABLE 1: DEMOGRAPHIC AND MATERNAL CHARACTERSTICS**

VARIABLE	STUDY GROUP	PERCENTAGE	CONTROL GROUP	PERCENTAGE	P - value
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	(N=254)		(N=278)		
MEAN MARRIGE AGE	26.42		26.03		0.14*
EDUCATION	129	50.8	174	62.6	0.26*
NON GRADUATION					
GRADUATION	82	32.3	73	26.3	
POST GRADUATION	43	16.9	31	11.2	0.17*
OCCUPATION	69	27.2	59	21.2	
EMPLOYED					
UNEMPLOYED	185	72.8	219	78.8	0.30*
RESIDENCE URBAN	183	72.0	176	63.3	
RURAL	71	28.0	102	36.7	
RELIGION HINDU	233	91.7	234	84.2	0.38*
MUSLIM	7	2.8	16	5.8	
SIKH	1	0.4	1	0.4	
CHRISTIAN	2	0.8	10	3.6	0.24*
BUDDUIST	11	4.3	17	6.1	
SOCIO ECONOMIC STATUS	1	0.4	3	1.1	
LOWER					0.35*
MIDDLE	253	99.6	274	98.6	
HIGH	0	0	1	0.4	
GRAVIDA- 1	138	54.3	165	59.4	0.35*
2	78	30.7	77	27.7	
3	32	12.6	25	9.0	
>4	6	2.4	11	4.0	0.35*
PARITY – 0	177	69.7	211	75.9	
1	72	28.3	49	17.6	
2	5	2	13	4.7	0.35*
>2	0	0	5	1.8	

\*THERE IS NO STATISTICAL SIGNIFICANT DIFFERENCE BETWEEN GROUPS

\*P > 0.05

**TABLE 2: PREGNANCY OUT COMES**

VARIABLE	STUDY GROUP (N=254)	PERCENTAGE	CONTROL GROUP (N=278)	PERCENTAGE	P - value
Pregnancy Induced Hypertension	7	2.8	19	6.8	0.162
Intrauterine growth Retardation IUGR	11	4.3	59	21.2	0.002*
PIH with IUGR	5	1.9	15	5.3	0.001*

\*P<0.05

\*PEARSON CHISQUARE SHOWS STATISTICAL DIFFERENCE BETWEEN GROUPS, P VALUE AND SIGNIFICANCE

**\* $p < 0.05$  UNIVARIATE ANALYSIS BETWEEN GROUPS, P VALUE AND SIGNIFICANCE**

Statistical analysis was performed using the SPSS statistical software. By applying univariate analysis & Pearson chi-square, it does not show significant difference statistically as  $p$  value is  $p > 0.05$ . (Table 1: demographic and maternal characteristics)

By applying Pearson chi-square, linear by association & univariate analysis it does show significant difference statistically as  $p$  value is  $p < 0.05$ . (Table 2: pregnancy outcomes) Complications such as isolated intrauterine growth retardation (IUGR) ( $p = 0.002$ ) and pregnancy-induced hypertension (PIH) with associated IUGR ( $p = 0.001$ ) were also significantly lower in the Comprehensive Antenatal care group.

Results were considered to be statistically significant if  $p$  value is  $p < 0.05$ .

## DISCUSSION

In this present study we evaluated the impact of comprehensive antenatal care to lower the Complications such as isolated intrauterine growth retardation (IUGR) ( $p = 0.002$ ) and pregnancy-induced hypertension (PIH) with associated IUGR ( $p = 0.001$ ). Comprehensive antenatal care was started at mid gestation and continued until delivery. We compared this study group to matched control group who were similar in patient demographic characteristic, but who followed standard obstetric advice i.e. daily walk for  $\frac{1}{2}$  hour twice a day. The comprehensive antenatal care group had a statistically significant increase in mean gestation age at delivery and reduced preterm delivery. Given the larger picture of, multiple failed attempts to reduce isolated intrauterine growth retardation

(IUGR) and pregnancy-induced hypertension (PIH) with associated IUGR due to stress and anxiety during pregnancy, in last decade. This study provides a potential intervention that might improve pregnancy outcome. Result from present study, a comprehensive antenatal care; suggest that pregnant women should be motivated to adopt this comprehensive antenatal care concept.

If stress reduction and lowering of maternal blood pressure were the significant results from the yoga practice, it is logical the significant complications, pregnancy-induced hypertension (PIH) and intrauterine growth restriction (IUGR), showed improvement.

## CONCLUSION

The study finding suggest that comprehensive antenatal care practices by its Holistic approach to health appears to be safe in pregnancy and lead to improved pregnancy outcome. It decrease the complications like, pregnancy-induced hypertension (PIH) and intrauterine growth restriction (IUGR), therefore the results provide evidence of the benefit of using comprehensive antenatal care as an alternative nursing intervention to improve the quality at maternal and child health care. This study provide index for future research on integrating the comprehensive antenatal care in caring for pregnant women with other health condition. The enrolled women did not have risk feature for the poor pregnancy outcomes (Low birth weight or prematurity) common in developing countries such as poor socioeconomic status, excessive physical stress, maternal malnutrition or disease. It is possible that greatest benefits of

comprehensive antenatal Care might be seen in higher stress environment.

The draw backs of the study were that, it was not a randomized controlled trial, no stress scores were recorded either pre or post comprehensive antenatal care and the patients selection bias of self selected groups. Therefore based on this pilot study we advocate randomized control trial, in large population to definitely demonstrate the beneficial effects of comprehensive antenatal care on pregnancy & Labour outcomes.

Stress management through Rajyoga Meditation, nutritional management & exercise may contribute to decreased risk of complications like, pregnancy-induced hypertension (PIH) and intrauterine growth restriction (IUGR), and eventually would decrease 1. Developmental and behavioral problems in the children, as a toddler and adolescent. 2. Risk of developing depression later in life. 3. As well as later mental health problems in the mother. 4. Foetal origin of adult diseases such as insulin dependent diabetes mellitus, hypertension and coronary heart disease. Increased exercise during pregnancy would reduce the risk of cesarean delivery.

"Comprehensive Antenatal care is safe, relatively cheap to implement & would reduce the costs of long term health care."

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