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A STUDY TO EVALUATE THE EFFECT OF SUPPLEMENTATION OF AYUSH SYSTEM OF MEDICINE IN OBSTETRICS CARE IN TERMS OF MATERNAL AND NEONATAL OUTCOME

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ABSTRACT

Title: A study to evaluate the effect of supplementation of AYUSH system of medicine in obstetrics care in terms of maternal and neonatal outcome. **Introduction:** In India, the incidence of maternal and foetal morbidity and mortality is much higher than the developed countries. The ministry of Ayush has advocated supplementation of Ayush system of medicine to improve the outcome. **Aim:** To evaluate the effect of supplementation of Ayush system of medicine in obstetric care in terms of maternal and neonatal outcome in a tertiary care hospital. **Material and method:** Pregnant women had supplementation of Ayush system of medicine during ANC & delivery from 01 Jul 2019 to 30 Jun 2020- recruited as study group. Women who delivered in the hospital from 01 July 2018 to 30 Jun 2019 was treated as control group. Practice of yoga postures, pranayama, meditation and homeopathic medicine in antenatal period, delivery and postpartum was provided. Maternal and fetal parameters among the two groups were

analyzed statistically. **Result:** There was reduction in mean difference of HTN/PIH (25%), IHCP (54%), IUGR (28%), APH (27%), oligohydramnios (44%), anemia (16%), thrombocytopenia (29%), PROM (92%), preterm delivery (58%), and urinary tract infection (62%), blood transfusion (76%), platelet transfusion (42%); a reduction of mean difference in such as preterm labor (19%), lower segment caesarean section (24%), postpartum hemorrhage (37%). There was incidence full term normal delivery (34%), birth weight (13%), 5-minute APGAR score> 7 in (17%) the study group. **Conclusion:** Utilization of Ayush system of medicine resulted in reduction in obstetrics complication and improved feto maternal outcome this is the first study at tertiary health care center and had validated of the advisory of Ministry of Ayush in regard to care of pregnant women.

KEYWORDS: Pregnancy, Ayush system of medicine, Obstetrics outcome.

INTRODUCTION

The disparity in availability of maternal and child health care facilities and need of their services in India exists very widely. Infant mortality rate in 2017 census was 37 /lac birth for rural and 32/lac for urban population.[1] Maternal mortality ratio in India is 113 CI (103-123), maternal mortality rate 7.3 with life time risk of death is 0.3%.[2] The incidence of intra uterine fetal growth retardation is about 24% of all newborn. Adult-onset epigenetic diseases are found higher among growth restricted babies.[3] The incidence of IUGR is about 10% in developed countries.[4]

Premature labor occurs in (12.9%) of women which accounts for more than three-quarter of premature babies. In India the incidence of hypertensive disease in pregnancy is 8-10% with 5.45% due to preeclampsia.[5] In a multicentric study the incidence of pregnancy hypertension was found in Pakistan (9.3%), India (10.3%), Mozambique (10.9%) and Nigeria (10.2%).[6]

In an Indian study, the incidence of APH was 1.29%. From a cohort of more than 1.57 million births in the Netherlands, Ruiter and coworkers (2015) found the frequency of APH was 0.22 %.[7,8]

The increasing trends of cesarean section operation in India with large regional variation is a matter of great concern which has risen from 10 % to 30% during the last few decades, in all India level, the CS rate was (2.9%) in 1992-93, 7.1% in 1998-99, 8.5% in 2005-06 and rapidly increased to (17.2%) in 2015-16.[9]

Nearly two-thirds of all maternal deaths are due to severe PPH, sepsis, and hypertension during pregnancy (pre-eclampsia and eclampsia). Pregnancy-related complications are the number one cause of death among girls between 15 and 19 years of age.[10]

Anemia is most common disease in Indian women which gets aggravated by frequent pregnancy at short intervals and complications at parturition which takes toll on the health and life of the women. In the world, India houses largest population of women with anemia and o**ver** half of reproductive aged women suffer from anemia.[11]

Government of India has initiated several schemes for the improvement of maternal and child health care such as **The Pradhan Mantri Surakshit Matritva Abhiyan (PMSMA)** launched by MoHFW,[12] **Janani Shishu Suraksha Karyakaram (JSSK)**[13] 'LaQshya [Labour Room Quality Improvement Initiative][14] In spite of such efforts, the obstetrics care is sub optimal for vast majority of pregnant women especially in rural areas and overcrowded government hospitals. Maternal morbidity and mortality as well as fetal and neonatal morbidity and mortality are still quite high needing urgent intervention for improvement.

Ministry of Ayush, Govt of India has advocated supplementation of Ayush system of medicine in the form of Yoga, Ayurveda, Homeopathy etc, in modern health care system including ESIC hospitals. The guidelines for pregnant women released by the department of Ayurveda, Yoga, Unani, Siddha and Homoeopathy, or AYUSH Ministry, Govt of India, titled" ***Mother and Child Care through Yoga and Naturopathy***". Yoga ashana, pranayama and meditation being noninvasive and it improves physical and psychological health in pregnant women. As quoted by AYUSH ministry as "The booklet puts together relevant and useful information culled out from many years of clinical practice in the fields of Yoga and Naturopathy. It aims to take the well-known health benefits of Yoga and Naturopathy to expecting mothers and new mothers in a simple booklet format this publication has been in distribution through the units of the erstwhile Department of AYUSH and CCRYN since 2013".[15] Stress and anxiety initiate sympathetic response causing tachycardia, rise of blood pressure. prolong exposure to sympathetic overture may cause hypertension, preterm labor, fetal intrauterine growth restriction as well as other fetal and neonatal adverse outcome. *During pranayama manipulation of breath movement takes place, which contribute to physiological response as decreased oxygen consumption, decreased heart rate, and decrease blood pressure, increased theta wave amplitude in EEG recordings, increased*

parasympathetic activity accompanied by enhanced alertness and reinvigoration. Pranayama increases frequency and duration of inhibitory neural impulses by activating pulmonary stretch receptors during above tidal volume inhalation as in Hering Bruer reflex, which bring about withdrawal of sympathetic tone in the skeletal muscle, blood vessels, leading to widespread vasodilatation, causing decrease in peripheral resistance and thus decreasing the diastolic blood pressure. After slow pranayama breathing both the systolic and diastolic blood pressure are decreased significantly with a slight fall in heart rate. The most of the pregnancy related complications such as pregnancy induced hypertension, IUGR, oligohydramnios, pregnancy loss, IUFD are associated with impaired placental perfusion. Thus, the role of Yoga and pranayama in improving the feto maternal outcome through modulation of autonomic nervous system is expected.[16,17,18,19,20]

Dr Samuel Hahnemann, the founder of Homoeopathy drew inspiration from the laws of nature and hence said," Let like be cured by like".[21] The system believes in treating the sick individual based on the symptom totality rather than the disease per se.[22] The theory of vital force, the doctrine of drug dynamization, the concept of miasms were some of the principles advocated by Dr Hahnemann as the pillars of Homeopathy. According to Hahnemann, pregnancy is the time when a woman is most sensitive and can be easily cured of the sickness using minimal doses in very high dilution.[23] Some remedies like, Actaea racemosa can be used in for recurrent abortions, pregnancy, during labour pain.[24] It was observed that Sabina derived from coniferae family, helps in expulsion of retained placenta with a characteristic pain.[25]

Ayurveda, the ancient and very effective Indian system of medicine had given tremendous importance to pregnancy. In the words of Acharya Charaka -a pregnant lady is to be treated very cautiously as if one is walking with a pot filled with oil in hand and without letting a drop to fall. Garbhini Paricharya -if adopted by a pregnant women right from the first month up to nine months of pregnancy help in good outcome in delivery and healthy baby.[26]

This study was planned to validate these suggestions of ministry of Ayush for pregnancy to optimize obstetric outcome in terms of improved maternal and fetal health in a tertiary care hospital located at socially and economic deprived population of industrial workers.

AIM

To evaluate the effect of supplementation of Ayush system of medicine in obstetric care in terms of maternal and neonatal outcome in a tertiary care hospital.

OBJECTIVES OF STUDY

1. To find the effect of supplementation of Ayush system of health care in addition to conventional standard obstetrics practice in obstetrics out come in pregnant women in terms of maternal and fetal health.
2. To analyze statistically the feto maternal outcome between the groups of pregnant women who had above mentioned intervention and others who received conventional obstetric care.

MATERIAL AND METHOD

It is a comparative interventional study conducted in a tertiary care hospital in north India. The existing facilities of Ayurveda, Yoga, Homeopathy in the hospital has been included in the comprehensive health care of pregnant women by imparting training and persuasion for regular practice of Yoga during antenatal period at ante natal mother craft class. The pregnant women who attended antenatal clinic for registration were informed about the advisory from AYUSH ministry to improve the obstetric outcome in term of maternal and fetal health and wellbeing; and consent was obtained.

Sample size

i) Pregnant women who had attended ante natal clinic for booking as ANC case and also delivered in the hospital from 01 Jul 2019 to 30 Jun 2020 were planned to be taken as study group.

ii) All pregnant women who had delivered in the hospital from 01 July 2018 to 30 Jun 2019 is treated as control.

Randomization

No randomization was done.

Specific intervention:

Patients were counseled about the study of intervention by supplementation with AYUSH system in the form: -

a) Demonstration of yoga postures, pranayama, meditation and ways to practice them at home by Yogacharya; Simple Yoga postures such as Katichkrashana, Tadashana, Tiryak-

Tadasana, Vajrashana, Ardhatitli Ashana, Purna titli Ashanna, Vakrashana, Marjharashana, Matsyakrid asana, Shavasana practices which improves lung function and improves the tone of pelvic musculature were demonstrated and taught for regular practice at home. Pranayama specially (Anuloma Vilome, Sheetali, Shitkari, and Bhramari) and meditation which has beneficial effect in balancing maternal sympathetic and parasympathetic system response were taught for regular practice at home.

b) Supply of homeopathic medicine in antenatal period, delivery and postpartum period under guidance of AYUSH (homeopathic) consultant in addition to conventional care.

c) Management of labor and delivery both vaginal and CS and neonatal care was done as per standard protocol.

The maternal parameters

Antenatal parameters such as gravidity, parity, past history of abortion, past history of ectopic pregnancy; pregnancy complications in present pregnancy such as anemia, pregnancy induced hypertension, gestational diabetes, ante partum hemorrhage, intrauterine growth restriction, and preterm labor, premature rupture of membrane, intrahepatic cholestasis, thrombocytopenia, normal delivery, instrumental delivery, caesarean section, postpartum hemorrhage, and puerperal sepsis, blood transfusion and platelet transfusion were recorded. Fetal parameters – incidence of preterm baby, low birth weight, Apgar score at 5 min, NICU admission, still birth, neonatal death.

Outcome measures

The maternal and fetal outcome data in the study group of control group in term of maternal and fetal outcome were recorded in excel sheet. The data of the two groups were compared by appropriate statistical software (SPSS).

RESULT

Total number of deliveries taken place during the period between 01st Jul 2019 to 30th Jun 2020 was 1, 283 is identified as study group A. Total number of deliveries taken place during the period between 01st Jul 2018 to 30th Jun 2019 was 2127 and was considered as control and identified as group B. As the hospital was declared as Covid dedicated hospital by Government of India since 01st March 2020 and lockdown was enforced and the non-Covid obstetrics facilities were suspended only covid obstetrics services were provided with limited work force. The significance of difference was studied by paired t test with the null

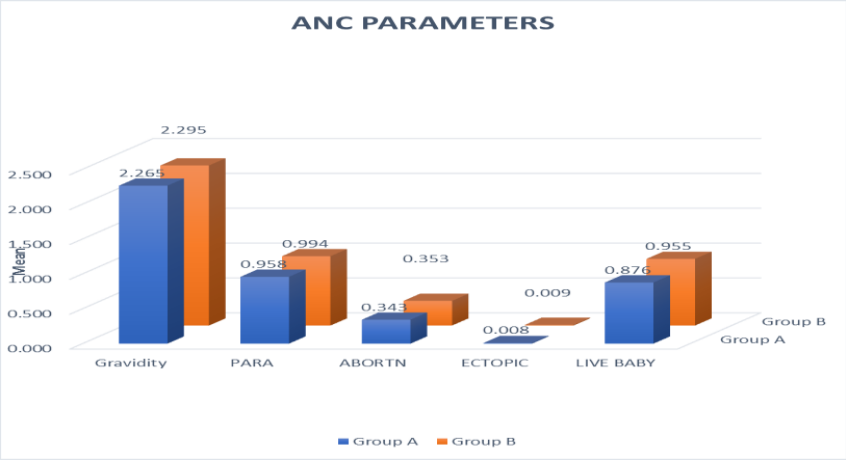
hypothesis – that intervention has caused no difference in maternal obstetrical and fetal outcome.

1) ANC Parameters

The ante natal parameters – gravidity, parity, abortion, ectopic pregnancy and number of live births of the two groups were analysed. As per the results, mean values are not significantly different between groups A and B for the listed five parameters. Probability values for all the five parameters like gravidity (0.468), abortion (0.257), parity (0.694), ectopic pregnancy (0.450) and live birth (0.483) are greater than 0.05 at 95% confidence level in the paired t-test statistical method. Hence, antenatal parameters are similar in group A & B as tabulated and expressed in bar diagram. (Table 1)

Table 1: The ante natal parameters of the two groups A & B.

Descriptive Statistics				Paired t-test					Results as per Null Hypothesis
				95% Confidence Interval of the Difference		t	df	Sig.	
		Mean	Mean Difference	Lower	Upper				
Gravidity	Group A	2.2648	1%	-0.112	0.051	-0.726	1819	0.468	Accepted
	Group B	2.2951							
Para	Group A	0.9577	4%	-0.026	0.099	1.134	1819	0.257	Accepted
	Group B	0.9940							
Abortn	Group A	0.3434	3%	-0.059	0.039	-0.394	1819	0.694	Accepted
	Group B	0.3533							
Ectopic	Group A	0.0082	11%	-0.008	0.018	0.340	1819	0.450	Accepted
	Group B	0.0091							
Live baby	Group A	0.8764	9%	-0.037	0.079	0.702	1819	0.483	Accepted
	Group B	0.9555							



Bar diagram no. 1: The ante natal parameters of the two groups A & B.

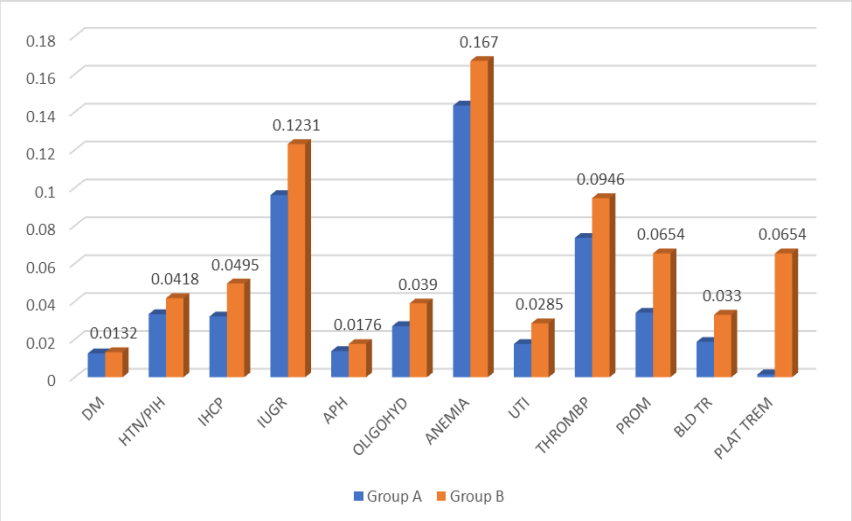
2) Pregnancy complications

Incidence of pregnancy complications like pregnancy induced hypertension, (HTN/PIH), intrahepatic cholestasis (IHCP), intrauterine growth restriction (IUGR), antepartum hemorrhage (APH), oligohydramnios, anemia, thrombocytopenia, premature rupture of membrane (PROM), preterm delivery, urinary tract infection, blood transfusion and platelet transfusion between the two groups were analyzed. As depicted in the table 2 below, there was a statistically significant difference between group A and B. The mean value of group B is found to be significantly higher in most of the parameters such as HTN/PIH (25%), IHCP (54%), IUGR (28%), APH (27%), oligohydramnios (44%), anemia (16%), thrombocytopenia (29%), PROM (92%), preterm delivery (58%), and urinary tract infection (62%). There is no statistically significant difference in occurrence of pregnancy with diabetes mellitus between the two groups. There was significant reduction in blood transfusion (76%) and platelet transfusion (42%). Probability values for these parameters were less than 0.05 except in (DM (0.90). Hence, it infers that group B has higher incidence in most of the parameters at 95% confidence level in the paired t-test statistical method. Therefore, null hypothesis: pregnancy complication parameters are not significant between-group A & B were *rejected* except in case of diabetes mellitus. The incidence of pregnancy associated complications such HTN/PIH, IHCP, IUGR, APH, oligohydramnios, anemia, thrombocytopenia, PROM, preterm delivery, urinary tract infection, blood and platelet transfusion were reduced statistically significantly in the study group. The descriptive statistics of obstetrics complications of group A & B are depicted in table no 2 and bar diagram no 2 (Table-2).

Table 2: The descriptive tabulated statistics of incidence of pregnancy complication parameters of group A & B.

Descriptive Statistics of the Pregnancy Complication				Paired t-test					Results as per Null Hypothesis
				95% Confidence Interval of the Difference		t	df	Sig.	
		Mean	Mean Difference	Lower	Upper				
DM	Group A	0.0126	4%	-0.009	0.008	-0.12	1819	0.90	Accepted
	Group B	0.0132							
HTN/PIH	Group A	0.0333	25%	-0.048	-0.029	-7.86	1819	0.00	Rejected
	Group B	0.0418							
IHCP	Group A	0.0321	54%	-0.049	-0.025	-6.07	1819	0.00	Rejected
	Group B	0.0495							
IUGR	Group A	0.0962	28%	-0.048	-0.006	-2.49	1819	0.01	Rejected

	Group B	0.1231							
APH	Group A	0.0138	27%	-0.022	-0.005	-3.26	1819	0.00	Rejected
	Group B	0.0176							
Oligohydramnios	Group A	0.0270	44%	-0.034	-0.010	-3.66	1819	0.00	Rejected
	Group B	0.0390							
Anemia	Group A	0.1434	16%	-0.144	-0.103	-11.94	1819	0.00	Rejected
	Group B	0.1670							
UTI	Group A	0.0176	62%	0.009	0.033	-3.48	1819	0.00	Rejected
	Group B	0.0285							
Thrombocytopenia	Group A	0.0736	29%	-0.045	0.013	-0.63	1819	0.05	Rejected
	Group B	0.0946							
	Group B	0.0946							
PROM	Group A	0.0341	92%	-0.046	-0.016	-4.08	1819	0.00	Rejected
	Group B	0.0654							
UTI	Group A	0.0176	62%	0.009	0.033	-3.48	1819	0.00	Rejected
	Group B	0.0285							
Blood transfusion	Group A	0.0187	76%	-0.026	-0.003	-2.46	1819	0.01	Rejected
	Group B	0.0330							
Platelet transfusion	Group A	0.0015	42%	-0.004	0.001	-1.34	1819	0.01	Rejected
	Group B	0.0654							



Bar diagram no. 3: The descriptive bar diagram of pregnancy complication parameters of group A & B.

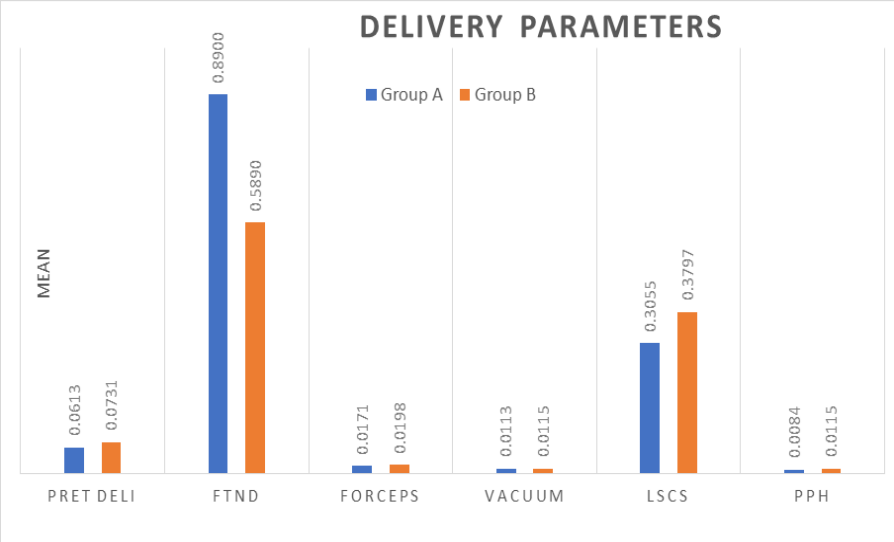
3) Delivery parameters

The mean difference between study and control groups in preterm labour (19%), full term normal delivery (-34%), forceps delivery (15%), vacuum delivery (2%), lower segment caesarean section (24%), postpartum haemorrhage (37%) was observed. In all the parameters there has been statistically significant difference between the two groups as probability values were less than 0.05 except in case of forceps delivery (0.07) and vacuum delivery (0.2). The null hypothesis: that delivery parameters are not significant between-group A & B were

rejected except in case of vacuum and forceps delivery as depicted in table no 3 and bar diagram no 3. (Table no 3 and bar diagram no 3)

Table 3: The descriptive tabulated statistics of incidence of delivery parameters of group A & B.

Descriptive Statistics of Delivery Parameters				Paired t-test					Results as per Null Hypothesis
				95% Confidence Interval of the Difference		t	df	Sig.	
		Mean	Mean Difference	Lower	Upper				
PRETERM DELIVERY	Group A	0.0613	19%	-0.058	-0.026	-5.11	1819	0.00	Rejected
	Group B	0.0731							
FTND	Group A	0.8900	-34%	0.357	0.462	15.37	1819	0.00	Rejected
	Group B	0.5890							
FORCEPS	Group A	0.0171	15%	-0.001	0.026	1.80	1819	0.07	Accepted
	Group B	0.0198							
VACUUM	Group A	0.0113	2%	-0.016	-0.001	-2.31	1819	0.20	Accepted
	Group B	0.0115							
LSCS	Group A	0.3055	24%	-0.112	-0.036	-3.81	1819	0.00	Rejected
	Group B	0.3797							
PPH	Group A	0.0084	37%	-0.015	0.000	-1.86	1819	0.05	Rejected
	Group B	0.0115							



Bar diagram no. 3: The descriptive bar diagram of delivery parameters of group A & B.

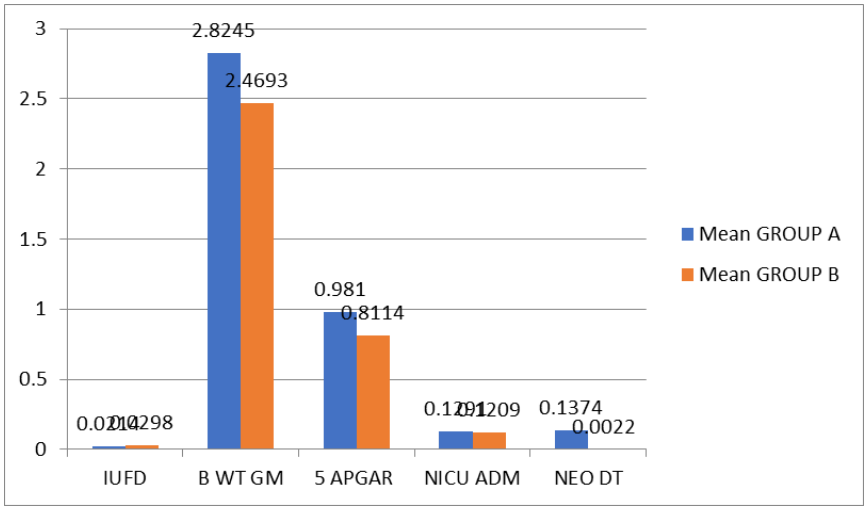
4) Baby parameters

The mean difference between study and control groups in respect of incidence of IUFD (39%), birth weight (-13%), 5-minute Apgar score (-17%), NICU admission (14%), and neonatal death (14%) was observed. Probability values for all the listed parameters are lesser

than 0.05 implied statistically significant difference between the two groups. There was significant reduction in incidences of IUFD, NICU admission and neonatal death in the study group and significant increase of incidence of birth weight and 5-minutes Apgar score in the study group. (Table 4 and bar diagram 4).

Table 4: The descriptive tabulated statistics of incidence of baby parameters of group A & B.

Descriptive Statistics				Paired t-test					Results as per Null Hypothesis
				95% Confidence Interval of the Difference		t	df	Sig.	
		Mean	Mean Difference	Lower	Upper				
IUFD	Group A	0.0214	39%	-0.009	0.012	0.30	1819	0.00	Rejected
	Group B	0.0298							
Birth Weight Kg	Group A	2.8245	-13%	-0.043	0.045	0.48	1819	0.01	Rejected
	Group B	2.4693							
5Min APGAR> 7	Group A	0.9810	-17%	0.041	0.099	4.75	1819	0.00	Rejected
	Group B	0.8114							
NICU Admission	Group A	0.1291	14%	0.004	0.031	2.57	1819	0.01	Rejected
	Group B	0.1467							
Neonatal death	Group A	0.1209	14%	-0.008	0.011	0.34	1819	0.03	Rejected
	Group B	0.1374							
	Group B	0.0022							



Bar diagram no. 4: The descriptive bar diagram of baby parameters of group A & B.

DISCUSSION

This is the first study conducted in a tertiary care center to evaluate the advisories on obstetrics care forwarded by ministry of AYUSH -2013. The study and controlled group were

taken from same hospital with similar patients, staff, and set up with a difference of time period. The study group had a smaller number of subjects due to Covid pandemic as the hospital was declared COVID hospital since March 2020. In the Covid infected pregnancy patients the AYUSH supplementation was continued as was done in non-Covid pregnant women.

The obstetrics outcome in terms of maternal parameters had the reduced incidence in mean difference of HTN/PIH (25%), IHCP (54%), IUGR (28%), APH (27%), oligohydramnios (44%), anemia (16%), thrombocytopenia (29%), PROM (92%), preterm delivery (58%), and urinary tract (62%), blood transfusion (76%), platelet transfusion (42%) except diabetes mellitus in the study group. The mode of birth and related complications also showed a reduction of mean difference in such as preterm labor (19%), lower segment caesarean section (24%), postpartum hemorrhage (37%) and increase in mean difference in full term normal delivery (34%). There was no significant difference in forceps delivery (15%), vacuum delivery (2%), in the study and control group. The incidence of baby parameters such as intra uterine fetal death, birth weight, 5-minute APGAR score> 7, NICU admission, neonatal death had significantly improved in the study group. there was significant increase mean difference in birth weight (13%), 5-minute APGAR score more than 7 (17%). There was significant mean difference in reduction of intra uterine fetal death (43%), NICU admission (14%) and neonatal death (14%).

The prevention and management of IUGR fetuses is a challenge as it is associated with several long-time health sequels and risk of developing restricted height and metabolic syndrome (type 2 diabetes mellitus, insulin resistance, and cardiovascular diseases) and delay in pubertal timing, adrenarche and reproductive function in later life. The Doppler changes in cerebral blood perfusion specially in middle cerebral artery and abnormal CTG tracing are taken as guide for the management of the IUGR fetuses. The vasodilatation in brain vessels is associated with structural and functional neurological damage, the decision for delivery is taken only in return of pulsatility index of MCA to normal which is associated with high perinatal mortality.[27,28,29] Maternal anxiety and sever stress adversely affect fetal growth. IUGR babies has higher risk of intrauterine hypoxia, asphyxia and occasionally death. Multiple loops of cord around neck although feared as cause of fetal hypoxia but recent study has differed in the opinion of management. Meconium-stained liquor, considered as sign of underlying pathology and cardiotocography (CTG) is a major tool in monitoring IUGR fetus.

The role of slow and deep breathing of pranayama which is known to cause increased perfusion to the tissues by ameliorating sympathetic overtone may be helpful in prevention and management of IUGR.[30,31,32] Mother and baby who was affected by preeclampsia has a greater risk to develop severe cardiovascular complications and metabolic syndromes later in life. The incidence of preeclampsia in developing countries compared to developed countries is seven times higher.[33] The vasoconstriction in uterine vasculature is associated with pre-eclampsia and IUGR, endothelial nitric acid producer such as L-arginine or isosorbide mononitrate lower the incidence of preeclampsia and also improve intrauterine growth and fetal outcome by their action of vasodilatation.[34] Spontaneous preterm labor, a syndrome caused by multiple pathologic processes such as intra-amniotic infection, decidual senescence, and breakdown of maternal-fetal tolerance, leads to 70% of preterm births.[35] Maternal health education provided during ante natal mother craft classes in group is found to be superior for better pregnancy outcome than individual counselling. Evaluating the format of care, Ickovics and coworkers (2016) compared individual prenatal care and group prenatal care. Childbirth education classes are also reported to result in better pregnancy outcomes.[36,37] In a survey among midwives in North Carolina, USA the use of homeopathic remedies is reported that 30% recommend homeopathic substances for use during pregnancy; two most common homeopathic remedies used for labor induction are cimicifuga (homeopathic black cohosh) and caulophyllum (homeopathic blue cohosh), which act directly on the uterus and cervix and was used to induce labor or augment labour. A long history of use of them around the world, especially in Europe for labour management exists.[38] Previous studies concerning the association between maternal anxiety during pregnancy and adverse birth outcomes have provided controversial findings. The results suggested that maternal anxiety during pregnancy was positively related to an increased risk of preterm birth and low birth weight.[39]

The “standard operating procedure in preconceptional and prenatal care through Ayurveda” published by department of Prasuti Tantra and Stri Roga, All India institute of Ayurveda , New Delhi (2018) have proposed several advises on diet, ashana, yoga, pranayama and meditation for optimum obstetrics outcome. The benefit of Om meditation in first trimester chanting and mantras “Purana Adesh Purnam Idam, Purnat Purnam Udachyate, Punasya Purnam Adaya, Purnam Evavashishyate“ create a healthy environment for fetus where Shanskara get the seedling, psychological wellbeing as well as positive mental state in pregnant women, and help in optimum fetal growth and normal parturition.[40]

The drawback of the study is that the pregnant women who visit ANC clinic at their own suitable times at variable period of gestation - Some at first trimester and few at near term. The level of intelligence for understanding and regularity of practice the various asana and pranayama is inconsistent among them. The length of period of supplementation of Ayush system of medicine was variable in the present study.

The advantage of supplementation of Ayush system of medicine is active involvement of pregnant women in physical activity as yoga, pranayama which balances autonomic nervous response towards parasympathetic preponderance; and positive thought generated by Om meditation and chanting of mantra reduces stress level is unique in comparison to conventional obstetrics care where medication and investigations predominates. These practices are inexpensive, sociocultural acceptable and applicable in all strata of society. The habit of yoga practice once established in life, it provides lifelong benefit in physical and mental health of the women.

CONCLUSION

Utilization of Ayush system of medicine by respective consultants as additional supplement to modern obstetrics care had reduced incidence of obstetrics complication, caesarean section and neonatal morbidity and mortality. There was increase in incidence of normal delivery and birth weight. Continued persuasion of pregnant women by health workers to practice Yoga asana, pranayama and meditation is very important to achieve better obstetrics outcome.

Ethical clearance

Ethical clearance was obtained from institutional ethical committee.

CONFLICT OF INTEREST

No conflicts of interest with respect to research, authorship and/or publication of this article.

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