

**IMPACT OF FASTING IN RAMADAN ON DEVELOPMENT OF FETUS****¹Dr. Sidra Hameed, ²Dr. Nimra Mustafa, ³Dr. Sara Ghani**¹University Medical and Dental College Faisalabad, ²Punjab Medical College Faisalabad,³University Medical and Dental College Faisalabad.**Article Received:** April 2019**Accepted:** May 2019**Published:** June 2019**Abstract:**

Objective: This case work aimed to assess the impact of fasting in Ramadan on fetal growth as well as pregnancy outcome.

Methodology: This case work carried out in Obstetrics ward of Allied Hospital Faisalabad from May 2018 to June 2018 in the month of Ramadan. A sum of 240 healthy females with pregnancy, half among them were fasting regularly in the month of Ramadan were the part of this case work. We divided the pregnant females into three different groups in accordance with their pregnancy trimesters. Every group consisted forty healthy females with pregnancy fasting regularly in the month of Ramadan & forty healthy females with pregnancy with no fasting in the month of Ramadan. For the assessment of the impacts of fasting in the month of Ramadan of fetal growth, ultrasonography carried out on all the females with pregnancy in the start and end of the Holy month Ramadan. We utilized the necessary aspects for the following calculation: rise in fetal BPD (Bi-parietal Diameter), rise in the FL (Femur Length), Rise in the EFWB (Estimated Fetal Body Weight), fetal BPP (Bio-physical profile), AFI (Amniotic Fluid Index) & systole/diastole ratio (S/D ratio) of umbilical artery.

Results: We were unable to identify any important disparity between the participants of both groups for age of fetal, gain in the weight of mother, EFWG, bio-physical profile of fetal, AFI & ratio of S/D. in opposition, an important rise in the maternal weight was under consideration in the 2nd & 3rd trimesters & an important rise was available in the AFI in 2nd trimester.

Conclusion: In the month of Ramadan, we found no adverse fetal outcome between females with pregnancy with regular fasting & pregnant females with no fasting. The examination of the pregnant females who want to observe fast should be carry out by doctors, properly take breakfast prior fast & they were taking necessary calories after fast. Highly comprehensive case works are the requirements to describe the impact of fasting in the month of Ramadan on the maternal & fetal outcome.

KEY WORDS: Comprehensive, methodology, fetal, maternal, methodology, examination, assessment, Ramadan, fasting, EFWG.

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INTRODUCTION:

In accordance with the religion of Islam, Muslims in the complete month of Ramadan does not drink & eat anything up to sunset from sun rise. The fasting duration is nine hours to 17 hours in accordance with the season. In accordance with the teachings of Islam, females with pregnancy are free to observe fast in the holy month of Ramadan, most of the females with pregnancy do not observe fasting Ramadan because of being well and for the better development of their baby. But some females with pregnancy regardless of different risk factors observe fast in the month of Ramadan [1].

In duration of fasting, many metabolism & physiological alteration are under observations in the people who are observing fast [2, 3]. Additionally, there are very less amount of case works that displays the impact of fasting on the mother as well as fetal. Whereas some case works concluded that there is no impact of fasting on pregnancy and some case works concluded the changes in the fetal parameters [2, 4, 5]. Past case works normally carried out on the females with pregnancy who were in their last three months of pregnancy period. This case work is different from those works as we assessed the alteration in all 3 trimesters of pregnant females who are observing fast in the month of Ramadan and those who are no fasting.

METHODOLOGY:

We carried out this case work in Obstetrics unit of Allied Hospital Faisalabad from May 2018 to June 2018 in the complete month of Ramadan. Total 240 females with pregnancy were the part of this case work. The division of the participants carried out in accordance with their pregnancy trimesters. Ethical

committee of the institute gave the permission to conduct this case work. We got the consent of every patient to participate in the case work. The ultrasonography of all the pregnant females carried out in the stat of Ramadan and then in every week in whole month of Ramadan. In the group of 1st trimester, we assessed the rise in BPD of fetal & reverse ‘A’ wave with the utilization of ductus venous Doppler. In the group of 2nd and 3rd trimester, ultrasonography carried out to calculate the number of measurements as rise in fetal BPD, rise in the FL of fetal, rise in EFBW, BPP, and AFI & S/D ratio of fetal.

The measurement of the weight of body of fetal carried out with the help of Hadlock’s Formula [6]. All the females suffering from other serious complication or diseases were not the part of this case work to reduce the effect of other feature on the development of fetal. We obtain the flow velocimetry waveforms with the help of Doppler ultrasonography [7]. We gave the supplementation of multivitamin to every pregnant female. We gave the advice to every pregnant female to use much water to reduce the risk of dehydration. Averages and SD were in use for the presentation of the numerical values. Kolmogorov-Smirnov test & Mann–Whitney U test were in use for analysis of various variables. SPSS V. 15 was in use for the collection of all gathered data.

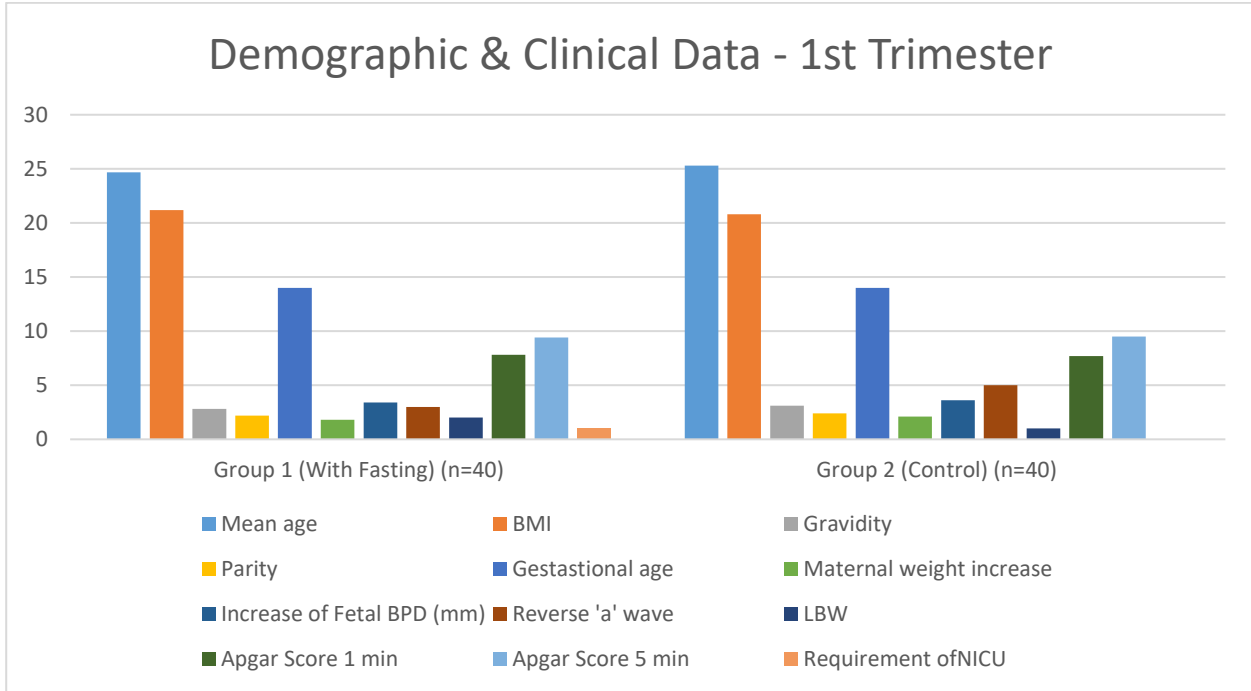
RESULTS

There were total two hundred and forty patients with an average age of 26.22 ± 3.70 years were the part of this case work. Baseline traits of first three months of pregnancy with and with no fasting are available in Table-1.

Table-I: Demographic and clinical data in the first trimester with/without fasting.

Demographic Data	Group 1 (With Fasting) (n=40)		Group 2 (Control) (n=40)		P value
	Mean / No	± SD / Percentage	Mean / No	± SD / Percentage	
Mean age	24.67	5.2	25.3	5.1	Not Significant
BMI	21.2	2.3	20.8	3.1	
Gravidity	2.8	-	3.1	-	
Parity	2.2	-	2.4	-	
Gestational age	14	2.2	14	1.6	
Maternal weight increase	1.8	-	2.1	-	
Increase of Fetal BPD (mm)	3.4	-	3.6	-	
Reverse 'a' wave	3	-	5	-	
Ratio of NVD/CS	28/12	-	30/10	-	
Newborn weight	3015	615.3	3052	595.6	

LBW	2	5	1	2.5
Apgar Score 1 min	7.82	0.5	7.7	0.4
Apgar Score 5 min	9.4	0.35	9.5	0.3
Requirement of NICU	1	2.5	1	2.5



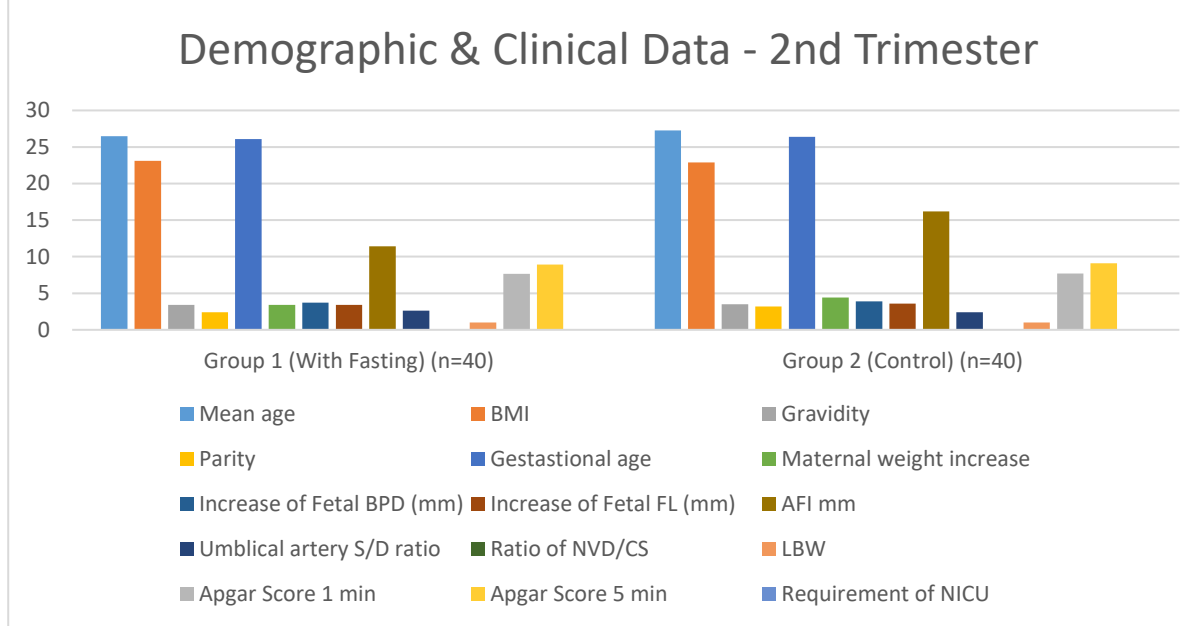
There was no important disparity among groups regarding demographic traits of patients, measurements of fetal & features of newborn.

Baseline traits of pregnant females with 2nd trimester pregnancy with & with no fasting are available in Table-2.

Table-II: Demographic and clinical data the second trimester with/without fasting.

Demographic Data	Group 1 (With Fasting) (n=40)		Group 2 (Control) (n=40)		P value
	Mean / No	± SD / Percentage	Mean / No	± SD / Percentage	
Mean age	26.46	4.3	27.26	3.9	Not Sig
BMI	23.1	2.4	22.9	2.2	
Gravidity	3.4	-	3.5	-	
Parity	2.4	-	3.2	-	
Gestational age	26.1	2.3	26.4	1.4	0.0300
Maternal weight increase	3.4	-	4.4	-	
Increase of Fetal BPD (mm)	3.7	-	3.9	-	Not Sig
Increase of Fetal FL (mm)	3.4	-	3.6	-	
Increase of EFBW (g)	370	-	390	-	
AFI mm	11.4	-	16.2	-	0.0200
Umbilical artery S/D ratio	2.6	-	2.4	-	Not Sig
Ratio of NVD/CS	34/6	-	32/8	-	
Newborn weight	2925	542.4	3013	524.2	

LBW	1	2.5	1	2.5
Apgar Score 1 min	7.64	0.6	7.72	0.35
Apgar Score 5 min	8.92	0.4	9.1	0.25
Requirement of NICU	-	-	-	-



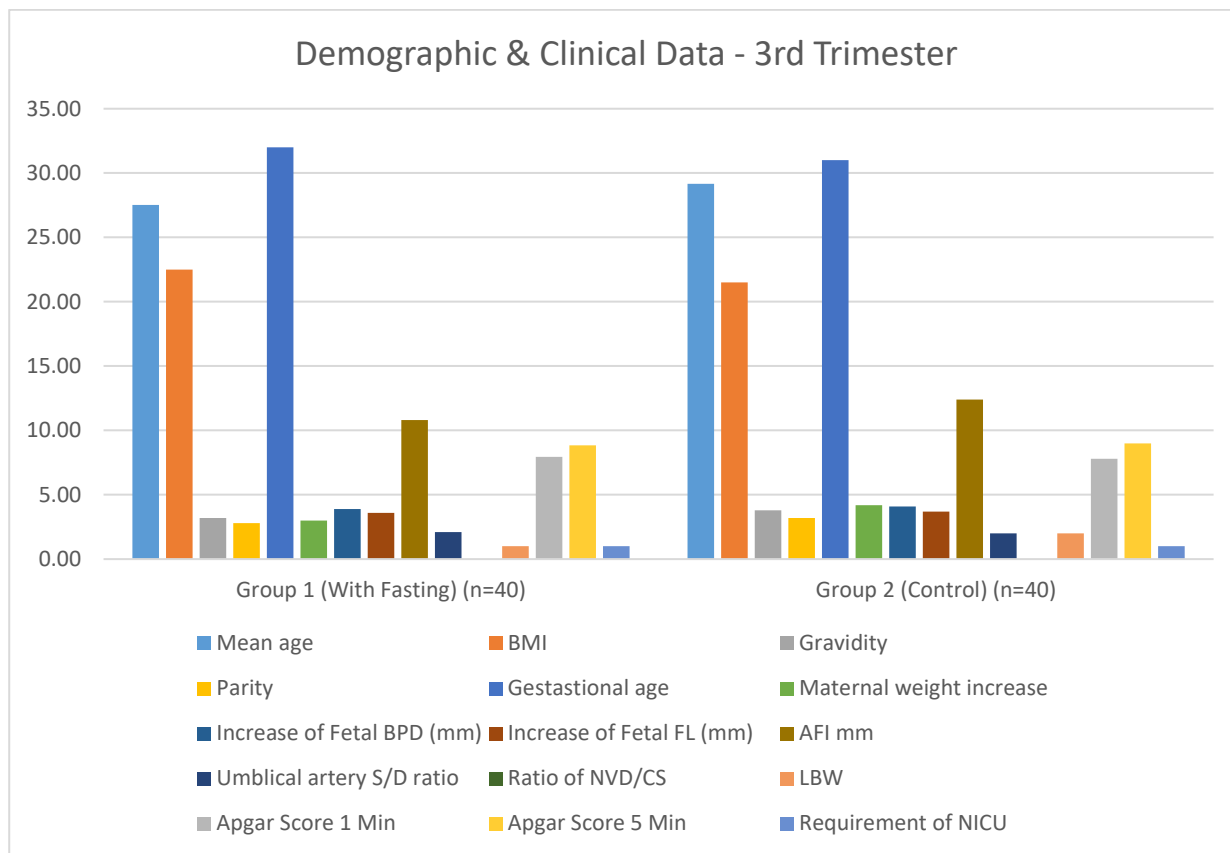
There was no important disparity between members of both groups regarding average age, BMI, parity, gravidity, duration of pregnancy, rise in the BPD of fetal, enhancement in the EFBW of fetal, ratio of S/D, ratio of delivery from vagina or cesarean section, weight of the new born child, Apgar score & need of

the intensive care of baby. But the rise in the weight of mothers & AFI amounts were importantly great in pregnant females with no fasting as compared to the females with fasting. Baseline traits of 3rd trimester pregnant females with and with no fasting are available in Table-3.

Table-III: Demographic and clinical data in the third trimester with/without fasting.

Demographic Data	Group 1 (With Fasting) (n=40)		Group 2 (Control) (n=40)		P value
	Mean / No	± SD / Percentage	Mean / No	± SD / Percentage	
Mean age	27.53	6.20	29.16	4.60	Not Significant
BMI	22.50	3.30	21.50	2.41	
Gravidity	3.20	-	3.80	-	
Parity	2.80	-	3.20	-	
Gestational age	32.00	2.20	31.00	1.80	
Maternal weight increase	3.00	-	4.20	-	0.0200
Increase of Fetal BPD (mm)	3.90	-	4.10	-	Not Significant
Increase of Fetal FL (mm)	3.60	-	3.70	-	
Increase of EFBW (g)	650.00	-	670.00	-	
AFI mm	10.80	-	12.40	-	
Umbilical artery S/D ratio	2.10	-	2.00	-	
Ratio of NVD/CS	29/11	-	31/9	-	
Newborn weight	3029.00	530.50	3045.00	572.60	

LBW	1.00	2.50	2.00	2.50
Apgar Score 1 Min	7.94	0.40	7.80	0.55
Apgar Score 5 Min	8.84	0.60	9.00	0.45
Requirement of NICU	1.00	-	1.00	-



There was no important disparity among the both groups regarding characteristics of demography of all members, measurement of fetal & features of newborn. But just rise in the values of weight of females was very high in the pregnant females with no fasting in comparison with the females who are observing fast.

DISCUSSION:

Very same as compared to the studies of the past, biometric & Doppler calculations have displayed no negative impact in terms of fetal and maternal outcome between fasting females with pregnancy and pregnancy females with no pregnancy. But we saw a significant rise in the weight of pregnant females in 2nd & 3rd trimesters and we also observed an important rise in the AFI in the 2nd trimester. Month of Ramadan remains for one month depending upon the time zone and season [8]. In the month of Ramadan, people do not eat & drink anything from start of sunrise to sunset [9, 10]. This month can lead to various alteration in the

body of fasting people. Those metabolic issues can be loss of weight, decrease in the systolic BP and reduction in the glucose level of blood [11, 12]. One case work has displayed in the body weight of fasting females with pregnancy in the last three months of pregnancy period [13].

A same case work showed a gain in weight & intake of calorie in fasting females with pregnancy but that condition was available with no impact on the health of these females [14]. Proper utero-placental flow of blood in the duration of pregnancy is very vital for the development of fetal and well-being of the pregnant females [15]. There are several methods which are in use for the determination whether fasting is dangerous for the development of fetal [16]. Case works of past have showed that there is no impact of maternal fasting on the biometric measurements of fetal [4, 14, 17] & flow of blood in uterine artery & umbilical artery [18, 19]. A case work performed on Somalian & Bangladeshi females displayed that there is no impact

of fasting on intrauterine development & time of birth [20]. In a transverse case work carried out by Makvendi, there was no report between pregnant females with fasting & with no fasting regarding anthropometric calculations of neonate [21]. In one case work, weight at the time of birth, height at the time of birth, circumference of head & mean thyroid hormone feature's evaluation carried out in last trimester. Same to past works, no disparity was present among pregnant females of both groups [22].

CONCLUSIONS:

The findings of this case work conclude that there was no adverse impact on fetal was available in the fasting females with pregnancy in the month of Ramadan in comparison with the pregnant females observing no fast. It is necessary for the pregnant females who want to observe fast to have a contact with their doctor. It is necessary for them to take necessary hydration & calories in the start and end of fasting period. There is requirement of case works on large scales to know about the impacts of the fasting on the development of fetal as well as pregnancy outcome.

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