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RESEARCH ARTICLE

HOW ADVANCED MATERNAL AGE INFLUENCE PREGNANCY? COMPARING THE OBSTETRICAL AND PERINATAL COMPLICATIONS IN YOUNGER AND OLDER PREGNANT WOMEN

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Abstract

Introduction: Pregnancy outcomes in older age (defined as > 35 years) are distinct from those in younger pregnant population and are linked to negative obstetric and perinatal outcomes. Preterm birth, antepartum hemorrhage, gestational diabetes, gestational hypertension, postpartum hemorrhage, small and large for gestational age newborns, and low APGAR score are a few concerns.

Methodology: A retrospective study conducted in hatta hospital to assess how advanced mother's age influence pregnancy. An analytical review was conducted on the medical files of 424 singleton pregnancies. Women aged 35 years and beyond comprised the study group (Group 1), whilst those under 35 years comprehend the control group (Group 2).

Results: Groups 1 and 2 had mean ages of 37 ± 2.3 and 28 ± 4 years respectively. Study group's mean gestational age was 37 ± 1.6 weeks whereas control group's was 38 ± 1.6 weeks. One third of the women were UAE Citizens. The study revealed considerably greater counts in Parity (92.5% versus 73.6% $p < 0.05$), assisted conception (8% versus 2.8%; $p < 0.05$), short interpregnancy interval (26% versus 17.5% $p < 0.05$), Preexisting Diabetes (26% versus 2.8% $p < 0.001$), GDM (38.6% versus 22.2% $p < 0.001$), Essential HTN (10.3% versus 0% $p < 0.001$), Preeclampsia (7.5% versus 3.3% $p < 0.05$), Polyhydramnios (9.4% versus 4.2% $p < 0.05$), oligohydramnios (4.7% versus 0.5% $p < 0.001$), placental abruption (6.1% versus 0.5% $p < 0.05$), Obstetric Cholestasis (1.9% versus 0% $p < 0.05$), Preterm delivery (35.3% versus 12.3% $p < 0.0001$), LSCS rate (51% versus 29.7% $p < 0.05$), PPH (23% versus 4.3% $p < 0.0001$), SGA (13.2% versus 5.2% $p < 0.0001$), LGA (10.4% versus 3.8% $p < 0.05$), and Low APGAR Score (16.5% versus 8% $p < 0.01$) in elder individuals. The number of antenatal visits, polyhydramnios, IUGR, neonatal sex and NICU admissions did not differ between both groups.

Conclusion: Unfavorable obstetrical and perinatal outcomes distinctly associated with increased mother's age. Obstetrical experts are urged to provide guidance to women who desire to conceive after age of 35.

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Introduction:-

Pregnancy in a woman at or after 35 years of age is traditionally regarded as an advanced age and considered as high risk pregnancy due to its association with poorer obstetrical outcome. In developed countries the prevalence of first pregnancies has increased in older women¹ but here in UAE most of the pregnancies at advanced maternal age are multiparous and this multiparity adds on possible adverse outcome.

Research on older age pregnancies in wealthier nations has revealed higher inherent risk of negative maternal and neonatal sequel. Part of maternal complications include increased risk of spontaneous miscarriages chromosomal abnormalities, preexisting medical conditions, Gestational Diabetes, Pre-eclampsia, still birth, preterm labour, Postpartum hemorrhage and caesarean birth. Small for gestational age, Intrauterine growth restriction, being admitted to NICU and poor APGAR scoring are all potential unfavorable fetal events².

All over the world, especially in developed countries child bearing later in reproductive life is increasing due to women's role in growing economies. In UAE approximately 30% of nation's work force are women and it is expected that number of career oriented women will increase in coming years leading to delayed child bearing.

In recent times, considerable reviews were written regarding pregnancy at advanced maternal age concentrating on the issues associated with advancing age.

In UAE most of the girls marry early and start child bearing at a younger age as compared to other developed countries and mostly aged 35 and up are multiparous, they don't consider themselves at increased risk of obstetric complications due to their previous child birth's experiences which were relatively at a younger age. Our study will focus on comparing the obstetrical and perinatal complications in younger and older pregnant women. This local data will help in better counselling of the women regarding their decisions about timing of motherhood.

Methods:-

After initial approval from Ethical committee; Data was collected retrospectively from October 2022 to December 2023 on predesigned data collection sheet from patient's chart review in Electronic medical record system (SALAMA). Data were retrieved from the mother's charts using data collection form, that was created after examining factors covered in different reviews. Social and demographic position, obstetrical record, method of delivery, unfavorable pregnancy and birth results were the parameters under study. 10% of data collected was counter checked for accuracy. Data was entered in EXCEL software to build a database with double entry and lock.

Data was analyzed to ascertain if increased maternal age during pregnancy is correlated with worse obstetrical and perinatal outcomes and results described as simple percentages and the intergroup comparative analysis of different variables was evaluated using the Chi square test. A p-value is considered significant if it is 0.05 or less.

Population and Study Sample:

Data was derived from singleton deliveries in Hatta Hospital during study period. Depending upon mother's age at delivery the participants were placed into two groups.

Sample Size and Selection of Sample

Sample size: In literature range of complications reported as (age > 35 years) 3-7 % in pregnancies age greater than 35 years and 1.5-5 % in pregnancies 20-34 years of age. Considering alpha and Power at 5% and 80% level and the average rate of complication in the youthful category is 1.5% and 7% in the older age, then the sample size to be studied is about 210 subjects in each group.

Study Design and Methodology

It was a Retrospective comparative study.

Sources of Data:

Anonymized data was derived from Electronic Medical Record System (SALAMA) by reviewing the medical files of women delivered in Hatta Hospital.

Collection of Data:

Data was collected on predesigned structured data collection form for the variables in both groups

Data Management:

10% of data collected was counter checked.

Data was entered in EXCEL software to build a database with double entry and lock

Data Analysis Strategies:

Data was analyzed for statistical analysis and results described as simple percentages, median, mode and inter group comparative analysis of different variables were evaluated by Chi-square tests. With the age group under 35 years serving as the reference group; for both groups, the odds ratio, associated 95% CI, and p value were computed. and a significant p value is taken not higher than 0.05.

Exclusion Criteria:

Women with multiple pregnancy, placenta previa and delivery at gestational age < 34 weeks were excluded.

Results:-**Socio-demographics and obstetric characteristics:**

In this research project, 435 mother's charts were examined. 11 charts were excluded for not meeting the inclusion criteria.

The study group (those over 35) had a mean age of 37 and a mode of 35 (IQR of 36-39) with standard deviation of 2.38 where minimum age was 35 and maximum was 46. While in contrast the reference group's mean and median age (20-34 years old) was 28 years (IQR of 25-32) with standard deviation of 4 years in which minimum age was 20 and maximum age was 34.

Almost 63.7% of mothers were Nationals of United Arab Emirates ("UAE"); there was no difference in each group (64% & 63%), and 36.3 % of women were of other nationalities; among these 22% were from Gulf region, 8.6% from other Arab nations and only 5.7% were of non Arabs origin. See Figure 1.

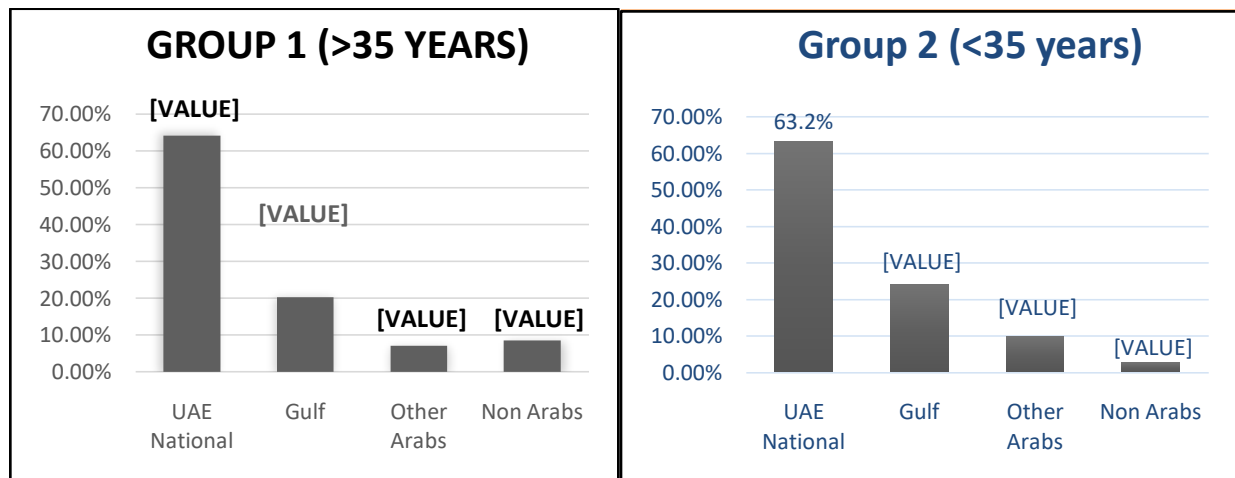


Figure 1:- Proportion of women's origin in study groups: The percentage of women's origin in the two categories did not differ much.

In this study 17% of mothers were either first time pregnant or have one baby, however 83% were having 2 or more babies. The probability of nulliparity and para 1 was considerably lower in older women (7.5%) in comparison to younger women (26%) with p value <0.001.

The percentage of conception via assisted reproduction in both groups differed significantly (p value <0.05).

Nearly one fourth of women in study group had less than 4 antenatal visits and between the two group there was not an evident disparity in prenatal visits.

While interpregnancy interval of < 18 months was significantly different in both groups, 26% & 17.5% respectively in Groups 1 & 2 (p value <0.05). Social and demographic variables and obstetric features of studied subjects are tabulated below:

Table 1:- Pattern of Social and demographic variables and obstetric features in Study groups.

Variables		Group 1 (study Group) Age 35 years and above, n=212		Group 2 (Reference Group) Age 20-34 years, n=212		Total N=424		p value
		n	%	n	%	n	%	
Nationality/ Origin	UAE	136	64.1%	134	63.2%	270	63.7	0.435
	Gulf	43	20.3 %	51	24.1%	94	22	0.779
	Other Arabs	15	7.1%	21	9.9 %	36	8.6	0.823
	Non Arabs	18	8.5%	6	2.8 %	24	5.7	0.0062
Parity	Para 0-1	16	7.5%	56	26.4 %	72	17	<0.001
	Para ≥ 2	196	92.5 %	156	73.6 %	352	83	<0.05
Conception	Spontaneous	195	91.9 %	206	97.2 %	401	94.5	0.698
	Assisted reproduction	17	8.02 %	6	2.8 %	23	5.5	<0.05
No. of Antenatal Visits	< 4	53	25	43	20.3	96	22.6	0.141
	≥ 4	159	75	169	79.7	328	77.4	0.698
Interpregnancy Interval	Not Applicable	8	3.8	43	20.2	51	12	1.000
	< 18 months	55	26	37	17.5	92	21.7	<0.05
	≥18 months	149	70.2	132	62.3	281	66.3	0.148

Extent of Medical Disorders:

This study disseminated the range of adverse Medical disorders related to advanced maternal age. Medical disorders span from Preexisting Diabetes, Gestational diabetes (“GDM”), Essential Hypertension (“HTN”), Pregnancy Induced Hypertension (“PIH”), Preeclampsia (“PE”), Cardiac disease, Thyroid disease, Asthma, Systemic lupus Erythematosus (“SLE”) and autoimmune disorders. Half (51.4%) of the women in younger age group (Group 2) went through pregnancy without any medical disorders whilst this number was 20% in older age group (Group 1) with p value of < 0.001. Prevalence of preexisting Diabetes (26%), gestational diabetes (38.6%), essential HTN (10.3%), Preeclampsia (7.5%) and Thyroid disease (9%) were significantly higher in older age category (Group 1) and p value was <0.05 for all of these disorders. Frequency of PIH, cardiac disease, Asthma, SLE and autoimmune disorders were of insignificant contrast. (Table 2)

Table 2:- Distribution of Medical Disorders.

Medical disorders	Group 1 (study Group) Age 35 years and above, n=212		Group 2 (Reference Group) Age 20-34 years, n=212		Total n = 424		p Value
No medical Disorder	43	20 %	109	51.4%	152	35.8 %	< 0.001
Pre Existing Diabetes	55	26 %	6	2.8 %	61	14.3 %	0.001
Gestational Diabetes	82	38.6 %	47	22.2 %	129	30.4 %	0.001
Essential HTN	22	10.3 %	0	0 %	--	--	0.001
PIH	4	1.9 %	2	0.9 %	6	1.4 %	
Preeclampsia	16	7.5 %	7	3.3 %	23	5.4%	<0.05
Cardiac Disease	4	1.9%	1	0.5 %	5	1.17%	
Thyroid disease	19	9 %	7	3.3 %	26	6.1 %	<0.01
Asthma	2	0.9%	1	0.5 %	3	0.7 %	Too small values
SLE and autoimmune disorder	1	0.5 %	3	1.4 %	4	0.95 %	

HTN: Hypertension, PIH: Pregnancy Induced Hypertension, SLE: Systemic Lupus Erythematosus

Adverse Obstetrical Consequences:

The sequelae of advanced maternal age was linked to unfavorable obstetrical repercussions. Significant variance existed in both groups for Polyhydramnios (9.4% versus 4.2%), Oligohydramnios (4.7% versus 0.5%), Antepartum hemorrhage (“APH”) due to Placental Abruption (6.1 versus 0.5%) and Obstetric Cholestasis (1.95 versus 0%) respectively with a p value of < 0.05. Occurrence of Intrauterine Growth restriction (“IUGR”) (9.4% versus 9 %) was same in both groups. Table 3 presents the adverse obstetrical outcomes.

Table 3:- Adverse Obstetrical Outcomes.

Obstetrical Outcomes	Group 1 (study Group) Age 35 years and above, n=212		Group 2 (Reference Group) Age 20-34 years, n=212		Total n = 424		p Value
Polyhydramnios	20	9.4 %	9	4.2 %	29	6.8%	<0.05
Oligohydramnios	10	4.7%	1	0.5 %	11	2.6 %	0.001
Antepartum hemorrhage Placental abruption	13	6.1 %	1	0.5 %	14	3.3 %	<0.05
IUGR	20	9.4%	19	9%	39	9.1 %	Not significant
Obstetric Cholestasis	4	1.9 %	0	0 %	4	0.9%	< 0.05

IUGR: Intrauterine Growth Restriction

Range of Delivery outcomes:

Method of onset of labour, delivery method along with pregnancy age at time of child birth and Postpartum hemorrhage (“PPH”) were measured in this study. With a standard deviation of 1.6 weeks and IQR of 37-39 weeks, group 1’s average pregnancy age at delivery was 37 weeks, while the median was 38 weeks. In contrast, Group 2’s mean and median pregnancy ages were 38 weeks at delivery, with an IQR of 37-39 weeks and a standard deviation of 1.6 weeks. Compared to younger women, who had a 12.3% chance of giving birth before 37 weeks, older women had a 35% chance of doing so (p value <0.0001). Figure 2 displays the differences between the two groups’ gestational weeks at delivery.

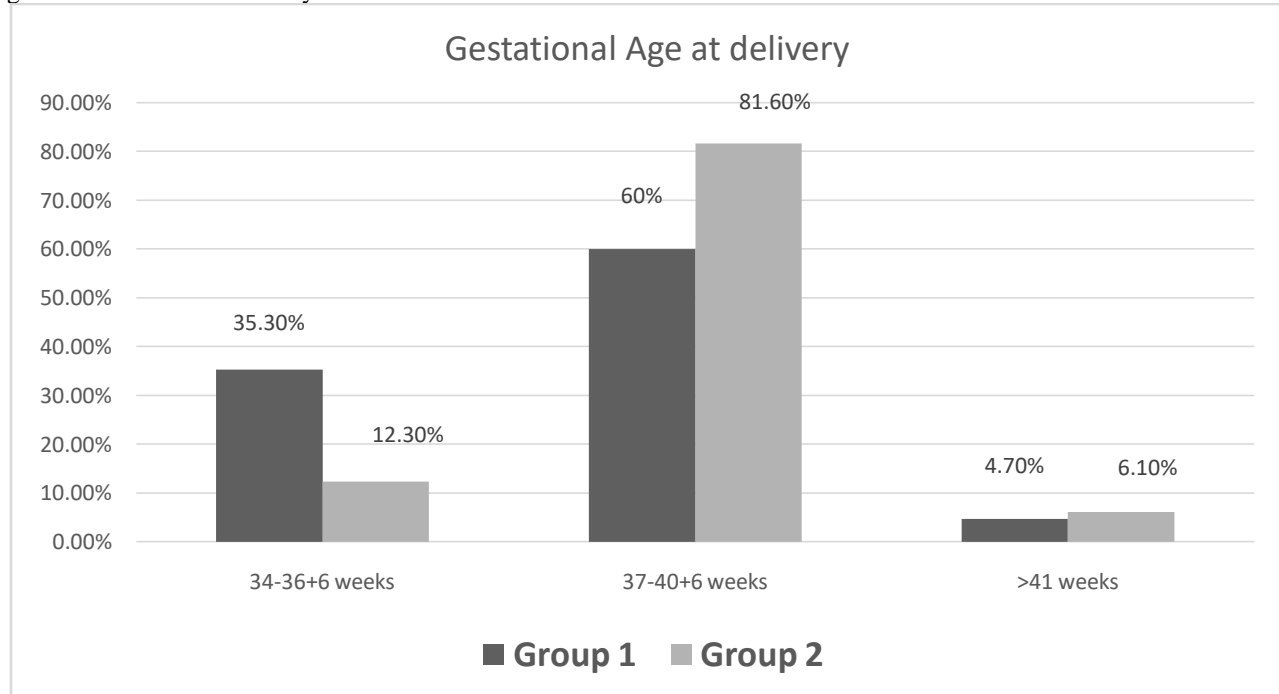


Figure 2:- Gestational age at Delivery: Preterm birth was substantially more common among older women 35 % in contrast to younger age 12.3% (p value <0.0001).

While natural labor onset was equally common, the investigated group's rates of induced labor were much greater. (35.6% versus. 22.8%; p-value <0.05).

Almost half of mothers (51%) gave birth via Lower Segment Cesarean section (“LSCS”) in research group. In contract it was 29.7% in reference group (p Value <0.001). The proportion of elective and cesarean sections performed during labor were comparable. Figure 3 presents mode of delivery in either group.

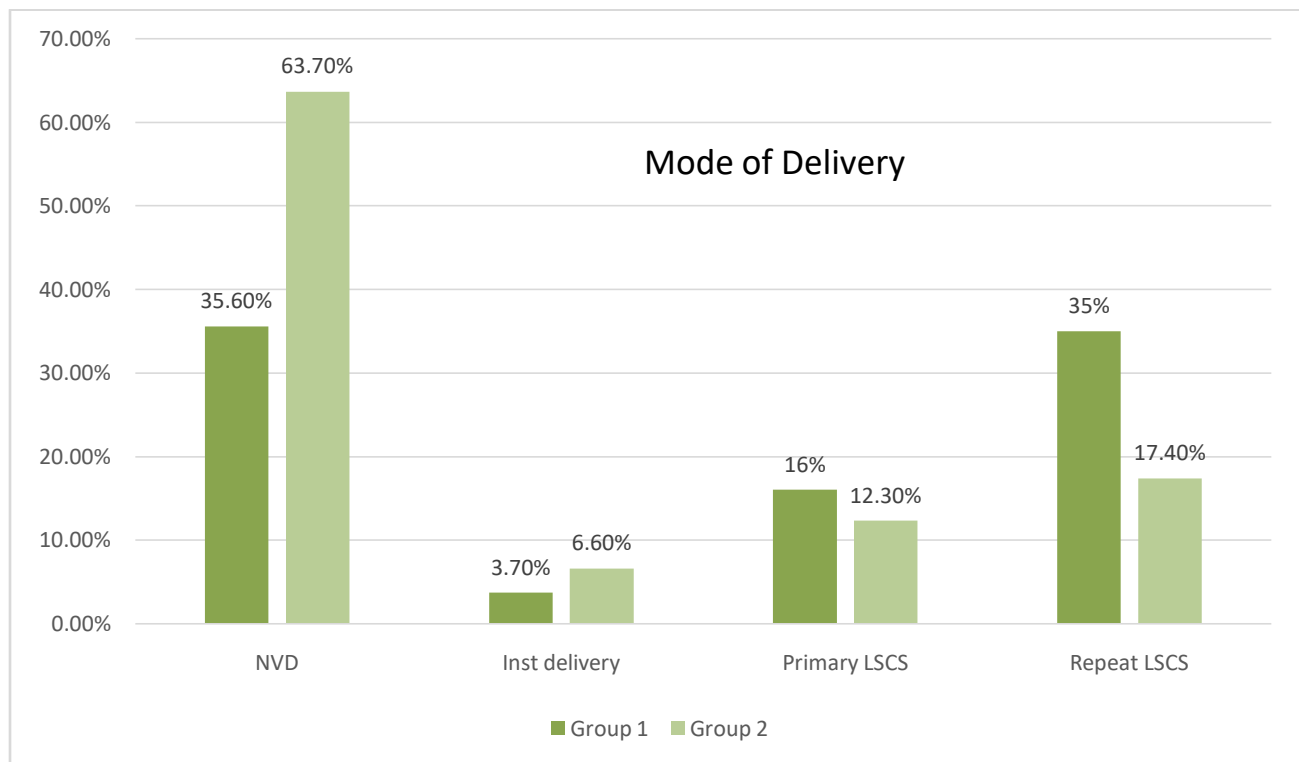


Figure 3:- Mode of Delivery: 51% of women in study group delivered by cesarean section as compared to 29.7% in reference group.

Rate of Postpartum hemorrhage (“PPH”) was five times higher in advanced age group (23 %) in comparison to younger age group (4.3%) p value <0.0001. Table 4 describes the Delivery Outcomes.

Table 4:- Range of Delivery Outcomes.

Delivery Outcomes		Group 1 (study Group) Age 35 years and above, n=212		Group 2 (Reference Group) Age 20-34 years, n=212		Total n = 424		p Value
Gestational age at delivery	34-36+6 weeks	75	35.3 %	26	12.3 %	101	23.8 %	<0.0001
	≥ 37 weeks	127	60 %	173	81.6 %	300	70.7 %	
	41 weeks	10	4.7%	13	6.1 %	23	5.4 %	
Mode of delivery	NVD	96	45.3 %	135	63.7 %	231	54.4%	<0.001
	Instrumental delivery	8	3.7 %	14	6.6 %	22	5.2%	
	Primary LSCS	34	16 %	26	12.3 %	60	14.2%	<0.05
	Repeat LSCS	74	35 %	37	17.4 %	111	26.2%	
PPH	Yes	48	23 %	9	4.3 %	57	13.5%	<0.0001
	No	164	77 %	203	95.7 %	367	86.5%	

NVD: Normal Vaginal delivery, LSCS: Lower segment cesarean section, PPH: Post-partum Hemorrhage

Perinatal Outcomes:

In this study, there were 2 (0.9%) Intrauterine fetal deaths in advanced age group, No early neonatal death in both groups.

Ratio of Female and Male neonates were nearly same in both groups. Babies born to older moms had a mean birth weight of $2.9 \text{ kg} \pm 0.454$ (mean \pm SD), whilst younger mothers gave birth to neonates with mean neonate weight of $2.9 \text{ kg} \pm 0.454$ (mean \pm SD) and a median of 3 kg.

Of the newborns, 10.4% happened to be large for gestational age (“LGA”) and 13.2% appeared small for gestational age (“SGA”) in Study group as compared to 5.2 % and 3.8% respectively in reference group (p Value <0.0001 & <0.05 each) see figure 4.

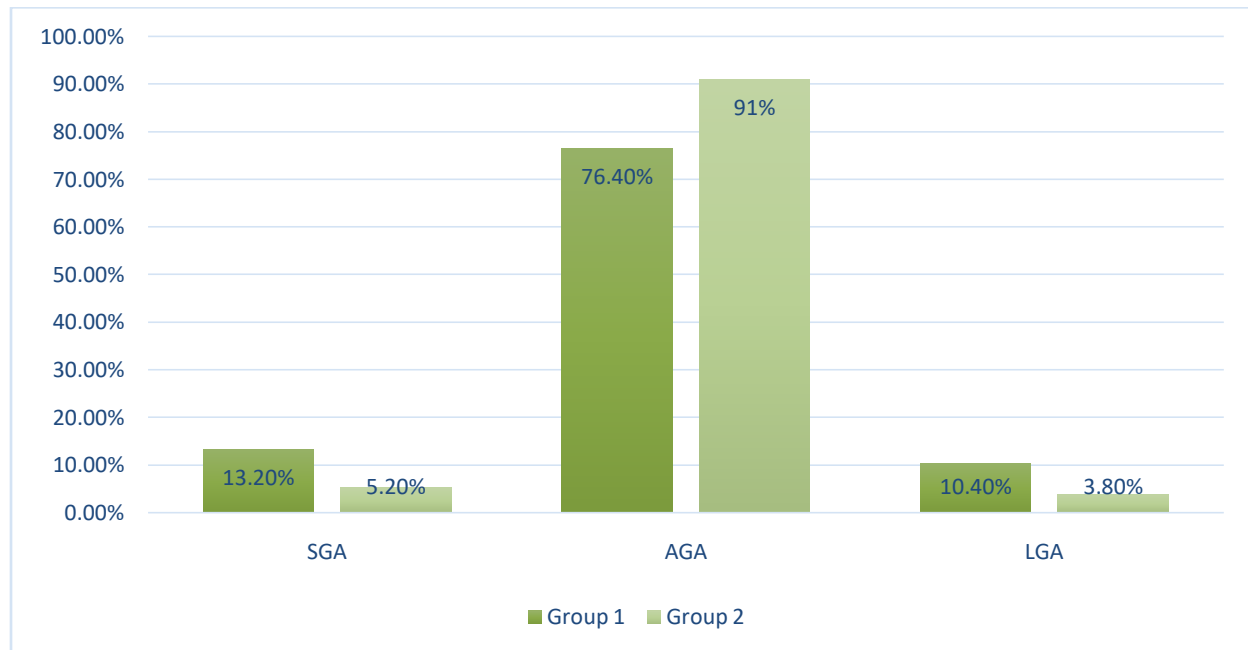


Figure 4:- Neonatal Birth weights: 91% of neonates in reference group were adequate for Gestational age (AGA) as compared to 76.4% in study group. 13.2 % of neonates Small for gestational age (“SGA”) and 10.4 % Large for Gestational age (“LGA”) in the research group as opposed to 5.2 % & 3.8% correspondingly in the comparison group (p Value <0.0001 & <0.05 each).

Neonates of older mothers had a greater likelihood of having an APGAR score below 7 (16.5% versus 8%) p Value <0.01. Occurrence of NICU admission was not significantly different in both groups. Table 5 represent the results of Perinatal outcomes.

Table 5:- Perinatal Out Comes.

Perinatal Outcomes		Group 1 (study Group) Age 35 years and above, n=212		Group (Reference Group) Age 20-34 years, n=212		Total n = 424		p Value
Neonatal sex	Female	103	48.6%	92	43.4%	195	46%	
	Male	109	51.4%	120	56.6%	229	54%	
Neonatal Birth weight	SGA (<10 th centile)	28	13.2%	11	5.2%	39	9.2%	<0.0001
	AGA (11-90 th centile)	162	76.4%	193	91%	355	83.7%	
	LGA (>90 th centile)	22	10.4%	8	3.8%	30	7.1%	<0.05
APGAR Score	≥7	177	83.5%	195	92%	372	87.7%	
	<7	35	16.5%	17	8%	52	12.3%	<0.01
NICU Admission	Yes	57	26.8%	40	18.8%	97	22.9%	0.064
	No	155	73.2%	172	81.2%	327	77.1%	

NICU: Neonatal intensive Care Unit

Relationship of poor outcomes with Advanced Maternal age:

We considered 22 outcome related factors in this study. Mom's age above 35 years was significantly associated with Gestational Diabetes, Preexisting Diabetes, Preeclampsia, Essential HTN, Thyroid disease, Obstetric cholestasis, polyhydramnios, Oligohydramnios, Placental abruption, preterm delivery, delivery by LSCS, PPH, neonates with both small and large for respective gestation and poor 5 minutes APGAR score.

Older moms had 2.2 times higher risk to acquire pregnancy related diabetes and 12.02 times greater likelihood to have preexisting diabetes in contrast to younger mothers (OR 12.02 (95%CI 5.049 to 28.648), p value <0.0001). Preeclampsia or PIH was 2.34 times more common in older women (OR 2.34 (95% CI 1.044 to 5.287), p value <0.05).

Moreover Oligohydramnios was 21 times more probable in study group in contrast to reference group (OR 21.97 (2.9218 to 165.3375) p value <0.05. Compared to younger mothers, older moms had a 13-fold increased risk of abruptio placentae (OR13.78 (1.7866 to 106.3453) p value <0.05).

The odds of having a baby born between 34 and 36+6 weeks were 3.9 times higher being over 35 years (OR 3.91 (95% CI 2.3809 to 6.4419) p value <0.0001).

Likelihood of delivery by cesarean section in Advanced age group was 2.45 times higher than their younger counterparts (OR 2.45 (1.6478 to 3.6606) p value<0.0001).

Possibility of PPH was 6.6 times more in Group 1 as compared to Group 2 (OR 6.6 (95%CI 3.1463 to 13.8518) p value <0.0001).

Group 1 was 2.2 times prone to be at five minutes with a poor APGAR, while the odds for SGA and LGA were 2.7 and 2.9 times elevated in the older woman's group. Analysis of all these variables is shown in Table 6.

Table 6:- Analysis of association with obstetrical outcomes.

	Yes, n(%)	No, n(%)	OR (95% CI)	p Value
Preexisting Diabetes				
Group 1	55 (26 %)	157 (74%)	12.02 (5.0496 to 28.6483)	<0.0001
Group 2	6 (2.8 %)	206(97.2%)		
Gestational Diabetes				
Group 1	82 (38.6 %)	130(61.4%)	2.214 (1.4464 to 3.3903)	<0.001
Group 2	47 (22.2 %)	165 (77.8%)		
HTN				
Group 1	22 (10.3 %)	190(89.7%)	50.1 (3.0242 to 833.1844)	<0.05
Group 2	0 (0 %)	212(100%)		
Gestational HTN / Preeclampsia				
Group 1	20 (9.4%)	192 (90.6%)	2.349 (1.044 , 5.287)	0.01
Group 2	9 (4.2%)	203 (95.8%)		
Polyhydramnios				
Group 1	20 (9.4 %)	192 (90.6%)	2.34 (1.0441 to 5.2873)	0.0604
Group 2	9 (4.2 %)	203 (95.8%)		
Oligohydramnios				
Group 1	20 (9.4 %)	192 (90.6%)	21.97 (2.9218 to 165.3375)	<0.05
Group 2	1 (0.5 %)	211 (99.5%)		
APH				
Group 1	13 (6.1 %)	199 (93.9%)	13.78 (1.7866 to 106.3453)	<0.05
Group 2	1 (0.5 %)	211 (99.5%)		
LSCS				
Group 1	108 (51%)	104 (49%)	2.45 (1.6478 to 3.6606)	<0.0001
Group 2	63 (29.7%)	149 (70.3%)		

Preterm delivery				
Group 1	75 (35.3 %)	137 (64.7%)	3.91 (2.3809 to 6.4419)	< 0.0001
Group 2	26 (12.3 %)	186 (87.7%)		
Postpartum Hemorrhage				
Group 1	48 (23 %)	164 (77%)	6.6 (3.1463 to 13.8518)	<0.0001
Group 2	9 (4.3 %)	203 (95.7%)		
Small for Gestational Age				
Group 1	28 (13.2 %)	184 (86.8%)	2.7 (1.3460 to 5.7444)	<0.05
Group 2	11 (5.2 %)	201 (94.8%)		
Large for Gestational Age				
Group 1	22 (10.4 %)	190 (89.6%)	2.9 (1.2837 to 6.7916)	<0.05
Group 2	8 (3.8 %)	204 (96.2%)		
Low APGAR				
Group 1	35 (16.5 %)	177 (83.5 %)	2.2 (1.2274 to 4.1917)	<0.05
Group 2	17 (8 %)	195 (92 %)		

HTN: Hypertension, APH: Antepartum hemorrhage, LSCS: Lower Segment cesarean section

Discussion:-

This study confirms that being 35 years or above in motherhood increases the chance of numerous negative consequences in pregnancy which is in general agreement with previous studies.

The average age of women in our study was 32.9, and mean age was 37 ± 2.38 years in Group 1, and 28 ± 4 years in Group 2, while BekirKahveci in Turkey found 36.6 ± 1.4 and 27.6 ± 4 ³ and in Northern Ethiopia was 37 and 26.6 respectively⁴.

Current study indicated that conception with assisted reproductive techniques increases by age as described by a study in Barcelona⁵.

As people age, the chances of Insulin resistance and diabetes mellitus rises and so it's not astonishing how Gestational diabetes and preexisting diabetes was significantly more common in older age group. A study from Saudi Arabia found this risk was 8.2 % while in our study it was 38.6 % which is more than 4 times than the Saudi mothers of advanced maternal age⁶. Two retrospective studies from UK also described an increased incidence of GDM and preexisting diabetes in elderly, despite considering the other complicating factors^{7,8}.

Insulin resistance increases and its production decreases with age which appears to suggest the primary trigger for higher risk of GDM in maternal age > 35 years.

The striking finding in our study is that none of the women was with essential hypertension in younger individuals as opposed to 10 % in elderly category. Risk of developing Gestational HTN /PE was 2.3 times higher in older mothers and is in accordance with other studies from UK, Saudi Arabia, Turkey & Northern Ethiopia^{4,6,8,9,10,16}.

The association between age and endothelial damage may be the cause for this relationship of elevated risk of HTN. Marta Claramonte reported a lower incidence of PE 1.6 % than our study 7.5%⁵.

Advanced age mothers were found to have higher rates of oligohydramnios than the younger women as narrated by pooja Sharma from India¹¹. Most of the studies didn't study amniotic fluid abnormalities. Mihret-ab Mehari didn't find a significant association of amniotic fluid abnormalities with advanced maternal age⁴.

Our finding indicated women who had birth later in life had a higher risk of APH due to placental abruption as described by other studies from Kingdom of Saudi Arabia, United Kingdom, Northern Ethiopia, Turkey and India^{3,4,6,7,8,12}.

In accordance with previous studies our study also demonstrated risk of preterm delivery was higher in older women^{3,5,6,7,8,12,13,14}. The same result is also supported by a WHO multi-country study¹⁵. This finding is refuted by research from Malaysia as well as the UK that found no link between maternal age and premature delivery^{7,8,16}. This

increased risk could be attributable to iatrogenic preterm delivery due to associated comorbidities in advanced maternal age.

Higher rates of delivery by LSCS in older age group was in resemblance with other studies across different countries like from Kingdom of Saudi Arabia, Lebanon, UK, Turkey, Barcelona, and India^{3,5,6,7,8,13,14}.

Studies constantly indicate that labour dystocia is frequently seen in women after 35 years of age. While the rate of primary cesarean sections in our study was not significantly different—16% for older women compared to 12% for younger mothers—the percentage of main cesarean sections increased with maternal age for both primiparous and multiparous moms, according to a U.S. cohort research¹⁷.

PPH was significantly influenced by maternal age, in our study the probability was 6.6 times higher. The research conducted in Iran and India^{12,14,16} backed up this conclusion.

The results of our research manifested that older age has a strong correlation with poor APGAR score at 5 minute, low and high birth weight neonates and still birth.

This study exhibited higher odds of underweight newborns in older mothers compared to those that are younger. A study by WHO in 29 countries demonstrated the same higher odds¹⁵. Alongside this, studies from India, UK, Brazil, and Africa supported our findings^{7,8,12,14,19}. This SGA association may be due to higher risk of hypertensive disorders in older age group.

We reflected that there is a strong connection between mom's age and Large for gestational age which was manifested by other studies¹⁹. However other studies stated that older maternal age was not linked to LGA babies^{3,4,7,8}. This variation could be due to higher prevalence of preexisting diabetes and GDM in our study; genetic and environmental variables may also play a part.

In alliance with previous research^{3,15,19}, our study exhibited that older mothers are 2.2 times more likely to have a 5 minute poor APGAR score. However, a Barcelona study found no correlation between poor APGAR score⁵ and advanced age, which runs contradicts our findings.

Strengths and Limitations:

Limitation of our study is that it's a retrospective and from one center of UAE and doesn't represent the situation across whole Emirates. Strength is that 63 % were UAE nationals and 22 % were from Gulf region which represents the risks for pregnancies in local population.

Recommendation for Future Research:-

To conduct prospective research to determine the certain interventions affect pregnancy outcomes in older women. Further research into the long-term impacts of advanced maternal age on maternal and child health may also be possible with the inclusion of a larger and more varied cohort and long-term monitoring of neonatal health outcomes.

Conclusion:-

Preterm birth, cesarean delivery, oligohydramnios, placental abruption, gestational diabetes, gestational hypertension, PPH, small and large birth weight and poor APGAR score at delivery were among the poor obstetrical events that were strongly correlated with mother's age of more than 35 years. Knowledge of the dangers of pregnancy in older age helps women make better decisions about when to give birth, which makes a difference in providing compassionate care. Facts about adverse events should be delivered in a way that is sustainable with cultural and religious values, beliefs and behaviors of the society. Interacting with women from various cultures should be in accommodating and courteous manner by keeping inaccount for individual's state of affairs for rationale behind having pregnancy at advanced age. It is advisable that improve previously known medical concerns and comply with a preconceptional evaluation after the age of 35.

Abbreviations:

AGA: Appropriate for Gestational age

APH: Antepartum Hemorrhage
CI: Confidence Interval
GDM: Gestational diabetes
HTN: Hypertension
LGA: Large for Gestational age
LSCS: Lower Segment Cesarean Section
NVD: Normal Vaginal delivery
OR: Odds Ratio
PE; Preeclampsia
PIH: Pregnancy Induced Hypertension
PPH: Postpartum hemorrhage
SGA: Small for gestational age
UAE: United Arab Emirates
UK: United Kingdom
USA: United States of America
WHO: World Health Organization

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Ethical approval and consent:

The Mohammed Bin Rashid University of Medicine and Health Sciences (MBRU) and Dubai's Institutional Review Board granted ethical clearance and permission for the study.

Confidentiality was not breached while collecting data as the data collection form was anonymous and doesn't identify individual's data.

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