

The effect of thyroid hormones on pregnant women who get abortion

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Abstract

This study was performed during 2013 in Al-Batool hospital / Baquba, for fifty pregnant women. The ages were between (17-50) years who had been getting abortion as compared with (24) healthy women as control group (same age) . When the activity of thyroid hormones (Triiodothyronine , Tetraiodothyronine - thyroxine and Thyroid stimulate hormone) were measured for both cases. Results showed that high rates of abortion had been occurred in the first trimester of pregnancy period while the low rates were in the second trimester of pregnancy period. The results also showed no significant relationship with respect to age among women who had undergone abortion, compared with control group. The study also showed that there was significant correlation between high rates Thyroid stimulate hormone with the number of women get abortion.

Key words:

Triiodothyronine , thyroxin , Thyroid stimulate hormone and abortion.

Human anatomy Classification Qm- (601-695)

Introduction :

thyroid disease in pregnancy can affect the health of mother as well as the child before & after delivery . thyroid disorders are prevalent in women of child -bearing age and for this reason commonly present as an inter current disease in pregnancy and puriperium [1] .uncorrected thyroid dysfunction in pregnancy has adverse effect on fetus and maternal well-being . demand of thyroid hormones is increased during pregnancy which may cause previously unnoticed thyroid disorder to worsen [2,3].

Fetal thyroxin is wholly obtained from maternal sources in early pregnancy since the fetus thyroid gland only becomes functional in the second trimester of gestation. As thyroxin is essential for fatal neurodevelopment it is critical that

maternal delivery of thyroxin to the fetus is ensured early in gestation in pregnancy

iodide losses through the urine and fetoplacental unite contribute to a state of relative iodine deficiency [3,5].

This pregnant women require additional iodine intake , A daily iodine intake of 250 µg is recommended in pregnancy [4]. Hypothyroidism is common in pregnancy with an estimated prevalence of 2-3% and 0.3-0.5% for subclinical an overt hypothyroidism respectively [5]. Hypothyroidism is diagnosed netting a high TSH associated with a subnormal T4 concentration . Sub clinical hypothyroidism(SCH) is present when the TSH is high but the T4 is low normal .Several studies , have shown an association between overt hypothyroidism

and adverse fetal and obstetric outcomes[6].

The aim of this study was to determine the effect of thyroid hormone abnormal on aborted women who had been getting abortion specially in first trimester of pregnancy compared with last menstrual period of pregnancy

Materials and Methods

This study was carried in the Al-Batool hospital/Baquba city for (50) pregnant women whose had missed

abortion their ages between (17—50) years and compared with (24) healthy control were nearly similar to the patients group for each patients and controls venous blood samples were obtained to measure the activities of thyroid hormones(T3,T4 and pituitary hormone) by Enzyme Linked Immunosorbent Assay (ELISA).Data was put on computer file for storage analysis ,frequency and percentage was calculated. Chi Square Test was done to test the association between variable. (SPSS) version 20 was applied , significant result was considered when $P\text{-value} \leq 0.05$.

Table 1: The distribution of study samples according to abortion and age groups

AGE GROUP	ABORTION					
	YES		NO		TOTAL	
	No.	%	No.	%	No.	%
<20	1	4.35	15	29.41	16	21.62
20-29	9	39.31	19	37.25	28	37.84
30-39	9	39.31	13	25.49	22	29.73
40-49	4	17.39	4	7.84	8	10.81
Total	24	100.00	50	100.00	74	100.00

$p > 0.05$

Table 2: The distribution of study samples according to the abortion and the trimester of pregnancy

Trimesters of pregnancy	ABORTION					
	YES		NO		TOTAL	
	No.	%	No.	%	No.	%
First	18	78.26	9	17.65	60	81.08
Second	5	21.74	42	82.35	14	18.92
Total	24	100.00	50	100.00	74	100.00

$p < 0.05$

Table 3: The distribution of study samples according to the abortion and thyroid hormones

Thyroid Hormones		ABORTION						P. value
		YES		NO		TOTAL		
		No.	%	No.	%	No.	%	
T3 ng/dl	Normal	8	34.8	23	45.1	31	41.9	0.405
	Abnormal	15	65.2	28	54.9	43	58.1	
	Total	23	100.00	51	100.00	74	100.00	
T4 ng/dl	Normal	20	87.0	50	98.0	70	94.6	0.051
	Abnormal	3	13.0	1	2.0	4	5.4	
	Total	23	100.00	51	100.00	74	100.00	
TSH ng/dl	Normal	17	73.9	50	98.0	67	90.5	0.001*
	Abnormal	6	26.1	1	2.00	7	9.5	
	Total	23	100.00	51	100.00	74	100.00	

* = significant

T3= Triiodothyronine

T4 = Tetraiodothyronine - thyroxine

TSH = Thyroid stimulate hormone

Results and discussion :

Data of this study were obtained from a group of women to study the activity of thyroid hormones (T3,T4,TSH) in abortion. The study depended on the age group, trimesters and thyroid hormones .

table(1) shows the distribution of study sample according to age groups, higher percentage of abortion in age groups(20-29,30-39) while lower percentage in age group(<20) and the association was found to be statistically ($p>0.05$) and this agrees with study performed in 2009 in the United States Of America which showed that the women aged between(20---29)years accounted for the majority(57%) of abortion[8].

Table (2)appears the significant association was found between abortion and first trimester of pregnancy ($p<0.05$) because the women perhaps not learn that

of her pregnancy or because her fetus dose not grow naturally , while the lower percentage was found in the 2nd trimester(82.35) when compared with non aborted women .This result is consistent with study performed in the united states which clarify that the majority(88%) of abortion occur in(12 - 13) weeks of a women's last menstrual period . Less than two percent of abortions occur after 20 weeks ,and abortion is extremely rare after 26 weeks of pregnancy(in the 3rd) [7].

Table(3)the study shows that significant association between abnormal TSH and abortion (P=0.001) while non significant association were found between abnormality of T3,T4 and abortion . Studies however , have suggested that normal TSH during pregnancy should be lower than this and have suggested using 2.5 mIU/l as the upper range cutoff [8,9]. This risk for miscarriage and preterm

delivery were increased when the level was higher. The presence of thyroid antibodies may further complicate this situation. Women with positive antibodies are at 2-fold increased risk for miscarriage [9,14].

Conclusion :

This study showed that:

- Higher percentage of aborted women in the age groups (20-29,30-39).
- Most cases of abortion occur in first trimester of pregnancy.
- Significant association was found between aborted women and abnormal rise of TSH.

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تأثير هرمونات الغدة الدرقية على النساء الحوامل اللاتي

قد تعرضن لحالات الإجهاض

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الخلاصة:

أجريت هذه الدراسة سنة 2013 في مستشفى البتول في بعقوبة لخمسین امرأة حامل تتراوح أعمارهن ما بين (17-50) سنة قد تعرضن لحالات الإجهاض مقارنة مع (24) امرأة كمجموعة ضابطة (من نفس الفئة العمرية) حيث تم قياس فعالية هرمونات لغدة الدرقية (T3,T4) و (TSH) لكلا الحالتين.

أظهرت النتائج بان النسبة العالية من حالات الإجهاض كانت قد حدثت في الثلث الأول من فترة الحمل بينما أقل نسبة كانت في الثلث الثاني من فترة الحمل كما بينت النتائج عدم وجود علاقة معنوية فيما خص العمر بين النساء اللاتي قد تعرضن لحالات الإجهاض بالمقارنة مع النساء اللاتي استخدمن كمجموعة الضابطة وكذلك أظهرت الدراسة إن هناك علاقة معنوية بين ارتفاع هرمون (TSH) وبين إعداد النساء تعرضن لحالات الإجهاض. (p=0.001)

Key words:

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