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Research Article

**LEVEL OF ANTI OXIDANT IN BODY AND ITS EFFECT ON  
PREGNANCY**<sup>1</sup>Dr Israr Khan, <sup>2</sup>Dr. Sarah Farrukh, <sup>3</sup> Dr Yasmin Khan<sup>1</sup>Mayo Hospital Lahore, Pakistan<sup>2</sup>Women Medical Officer, DHQ Hospital Narowal<sup>3</sup>Sheikh Zayed Hospital Rahim Yar Khan, Pakistan**Abstract:**

**Objective:** The main purpose of this research was to know about the value of Total Antioxidant Capacity (TAC) in pregnant women of Pakistan that could be done through the evaluation of TAC in the last three months of an ordinary pregnancy.

**Methodology:** The study was carried out on women with pregnancy and without pregnancy. Both were twenty in numbers. Both types of cases were of same ages. In both types of attendants, TAC was assessed and ideal methods were used to handle the value of TAC.

**Results:** 0.84 mill moles per liter was the TAC value in pregnant females which was 0.16 mill moles per liter less than the standard value (1 millimole per liter) among the controls.

**Conclusion:** In the final outcome, we come to know that there was a low value of TAC present in the women of Pakistan. It was the primary report and it will be interrogated further.

**Key Words:** TAC, Conceive, Pregnancy, Oxidation.

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**INTRODUCTION:**

Oxidants work as radicals and their production in a large quantity in the human body is known as Oxidative strain. Females have to suffer the hectic condition of being with baby in their body. Hence, we can make a prediction that it can create a large amount of the materials which use oxygen to make other substances better known as oxidants and it can cause the reduction in antioxidant capacity total value. Total antioxidant capacity is affected by the pregnancy and this effect is different on the women of different areas of the world because they have to face different diet conditions and strained environments. Therefore, TAC value is different in women of Pakistan and Caucasian women [1].

It is physiological method to have baby in the body. Women have to suffer a lot at the time of their first pregnancy period. Oxidative strain causes these types of diseases because oxidation process improves during pregnancy. It is quite visible that in normal pregnancy, markers of oxidation strains are likely to be promoted [2]. TAC is a process which creates a balance between oxidants and neutralizing agents better known as antioxidants. Different classes of oxygen and the substances made by reaction of oxygen from other substances are known as oxidants such as peroxides. A state of equilibrium is established by the oxidant killers against the effects of the radical oxygen items and its substances. Some of the antioxidants are carotene, ceruloplasmins and some kinds of vitamins [3]. These chemicals elements can cause a disaster on the easy reactive elements. Therefore, these antioxidants kill the strain produce by the oxidants during the period of pregnancy. Basically TAC is the name counting the countermeasure effects of the chemicals which reduces the oxidant activity [4]. There is a lack of knowledge about the stress produced by the oxidation during pregnancy in Pakistan. The main purpose of this research was to know about the value of TAC in pregnant women of Pakistan which could be done through the evaluation of TAC in the last three months of an ordinary pregnancy.

**METHODOLOGY:**

**Subjects:** 20 different women having baby in their body were chosen from the teaching hospital of the Benin University. All the selected women were between twenty to thirty-nine years of age who were in the period of last three months of their pregnancy tenure and there was no visible difficulty in their pregnancy. There were no diseases such as tension or other stomach problems in them. Controls were made on them by normal women without pregnancy. Both of the groups were one ratio one in quantity on the basis of equal

age. The non-pregnant women bodies were checked and it was confirmed that they were not pregnant with the help of ultrasound carried out by specialist and urine test carried out by checking early morning urine. Both of the cases and their controls (in shape of non-pregnant women) were questioned about their basic information. That was written in documents such as qualification, their skills and their age. Ethical committee of the hospital gave the approval for the research and all the attendants of the research gave the consent for this study.

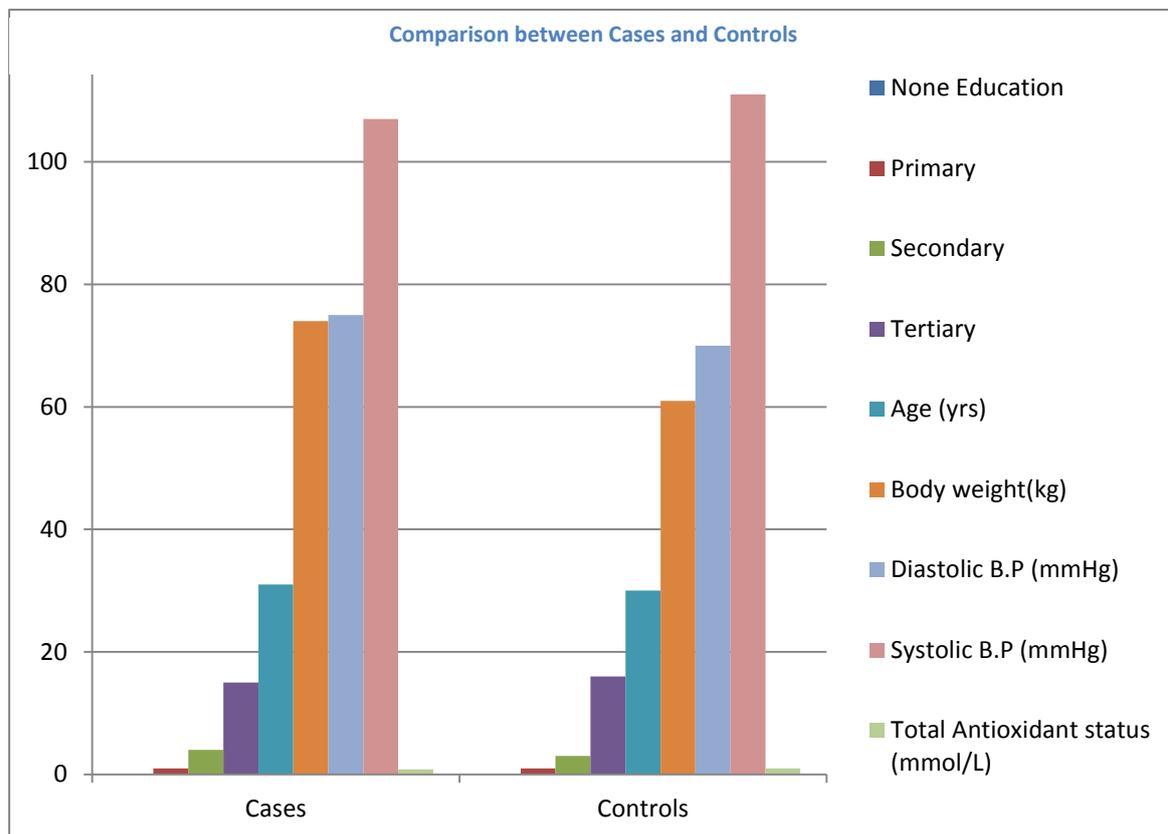
**Laboratory Assay:** Each of the participants has to contribute with 10 milliliter of pure veins blood and blood was placed in tubes made of lithium. A normal method was chosen for this purpose which was free from the germs causing diseases. A machine which uses centrifugal force to separate the different parts of blood was used to separate the plasma. Plasma was placed in puppets. Same models taken from the participants were thoroughly checked on the same day of their collection to know about the total antioxidant status. All the checked models were frozen and stored for further testing. Randox is the name of a laboratory in USA which made the total antioxidant status kit better known is TAS kit. So, TAS kit was used to count the TAS. The intensity of light is used to measure its quantity in this method by using the photometer after color separation of light.

**Statistical Analysis:** All the researched data was checked by using of tables and graph on computer by use of software. Different values were measured through this process. Ninety-five percent interval of confidence was obtained through testing.

**RESULTS:**

Twenty pregnant and twenty normal women were selected and every member of one group was of the same age as compared to other group's member. The age of the participants was 28.01 to 34.29 year with confidence interval of ninety-five percent. There was not any difference of age in the age of control's member participants. The average pregnancy period was from 27.42 to 38.58 weeks and confidence interval was of ninety-five percent. The qualification of the controls was also not much different from the participants. The qualification scale and their percentage of the participants are given in the table. Twenty-five percent of the participants were without any employment but other seventy-five percent were with employment. The pregnant women were with less TAS about  $0.842 \pm 0.1711$  millimoles per liter but the non-pregnant women have TAS  $1.003 \pm 0.187$  millimoles per liter.

Table-I: A comparison of social and clinical characteristics between pregnant and non-pregnant controls.				
Variable	Cases	Controls	P-value	Comment
None Education	0	0	—	—
Primary	1 (5%)	1 (5%)	—	—
Secondary	4 (20%)	3 (15%)	0.71	Not significant
Tertiary	15 (75%)	16 (80%)	—	—
Age (y <sup>rs</sup> )	31.25 ± 3.24	30.9 ± 2.9	0.4	Not significant
Body weight(kg)	74.6 ± 9.8	61.9 ± 7.8	> 0.001	Significant
Diastolic B.P (mmHg)	75.0 ± 14.3	70.2 ± 9.0	0.2	Not significant
Systolic B.P (mmHg)	107 ± 23.9	111 ± 8.6	0.5	Not significant
Total Antioxidant status (mmol/L)	0.84 ± 0.17	1.00 ± 0.19	0.007	Significant



### DISCUSSION:

Females body completely changes in shape during last three months of pregnancy period and these changes produces a lot of stress due to oxidation process. The chemical elements which reduce the effect of oxidation are being used which are known as antioxidants [5]. TAC is an equilibrium state between the oxidation and anti-oxidation. In this research, it is proved that there is a lack of TAC

value in women of ordinary pregnancy. Some other studies also proved the low value of the antioxidants during pregnancy. But this research proved this claim on global level [6].

Pregnancy period is not completely harmed by the oxidation process. Oxidation process also pays a basic function in the pregnancy process [7]. There are some actions done by the oxidation process.

They are welcomed at the initial stage of the pregnancy by oxygen and nitric oxide. Complication and diseases arise when there is not a balance state between oxidation and anti-oxidation because of high level of oxidation process and low level of neutralization actions [8]. Its outcome comes in the shape of low TAC. The outcome of high oxidation comes in the shape of free radicals which are of many types. Fatty acids and other carbohydrates which are the basic ingredients in membranes are countered by these new active elements [9]. The products produced by these radicals can cause malfunctioning of cells and their different part and increase the resistance in the veins.

Lack of some kinds of vitamins also increases the oxidation stress during the pregnancy. Therefore, mother and the baby in her get less amount of vitamins and other required elements. Thioredoxin reductase function is disturbed by the less production of these elements due to oxidation [10]. Ribonucleic acid and deoxyribose nucleic acid functioning is also hindered by above mentioned system. This kind of lack in the necessary elements increases the oxidation strain value. The high value of the oxidation process causes the use of high amount of antioxidant and decrease the value of TAC. This discussion proves the reason of low TAC value in the women having baby in them [11].

Pregnancy is affected by the lack of low TAC in many ways. The inflexibility and inefficiency of placenta in pregnant women are the result of lack of antioxidant. It can be the cause of many diseases in the females which could lead to great loss [12]. Gestational diabetes is one of the diseases caused by this reason. Now, we are able to summarize that most of diseases and difficulties faced by pregnant women are the result of the low amount of the total antioxidant capacity. About sixteen percent deaths were occurred due to Preeclampsia [13]. Preeclampsia is a disease caused by the imbalance between the oxidant and antioxidants. Vitamin C and E are also necessary for pregnant women according to a London report. Different methods of curing are being used in different countries to save the lives of pregnant women [14].

So, different kinds of additional supplements equipped with the selenium and vitamins are to be used to mitigate the diseases in the women and to higher the TAC value in pregnant women. This will be a great effort to improve the health condition in the background and rural areas where women have to suffer a lot of pain due to poor medical service [15]. The outcome of this research is a primary aid for the use of chemical elements enriched with the antioxidant to improve the health condition of pregnant woman but it will be implied after a thorough medical investigation.

### CONCLUSIONS:

Final report confirms that in the last three months of the ordinary pregnancy period, the TAC was found in low stage. To decrease the diseases in the ordinary pregnancy period, different types of the materials which would prevent the growth of oxidants would be given to the pregnant women after skilled medical studies.

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