



**To compare liver function test level of normal and abnormal pregnancy**

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**Abstract**

**Background:** The pregnant woman experiences physiological changes to support fetal growth and development. The levels of estrogens (estradiol) and progesterone increase progressively during pregnancy. These sex hormones have effects on hepatic metabolic, synthesis, and excretory functions.

**Methods:** Hospital based comparative analysis was conducted at Department of Obstetrics and Gynaecology, SMS Medical College and Associated Hospitals, Jaipur.

**Results:** Mean SGPT level among cases was 22.88 IU/L while in controls was 21.8 IU/L hence significant difference among the two groups was not seen as p value was 0.536. Although the mean value of serum alkaline phosphatase among cases was 93.5 IU/L and in

controls was 89.14 IU/L which was not different statistically as p value is 0.16.

**Conclusion:** SGOT and SGPT higher in cases as compare to control.

**Keywords:** LFT, Pregnancy, Women.

**Introduction**

The pregnant woman experiences physiological changes to support fetal growth and development. The levels of estrogens (estradiol) and progesterone increase progressively during pregnancy. These sex hormones have effects on hepatic metabolic, synthesis, and excretory functions.<sup>1-2</sup> The biliary excretion of bromosulfophthalein decreases during late pregnancy<sup>3-4</sup> and the clearance of some compounds that are secreted into bile may therefore be impaired.<sup>5</sup> The phenomenon of hemodilution secondary to the increase

in plasma volume decreases the serum protein concentrations. Consequently, certain changes in values of liver function tests occur during normal pregnancy. In this chapter, we review the liver-related clinical and biochemical changes that occur during normal pregnancy, with emphasis on liver function tests that are used for the management of liver diseases in pregnancy.<sup>5</sup>

**Material and Method**

**Type of Study:** Hospital based comparative analysis.

**Study Design:** Prospective Study

**Place of Study:** Department of Obstetrics and Gynaecology, SMS Medical College and Associated Hospitals, Jaipur.

**Duration:** From **June** 2018 to July 2019 when desired sample size was achieved (after taking the approval from Institutional Review Board and Ethical committee).

**Study Participants:** The study included women with early pregnancy upto 14 weeks divided further as:

**Case:** Women with early pregnancy upto 14 weeks with either abdominal pain or vaginal bleeding or suspected extrauterine pregnancy.

**Control:** First trimester pregnancy upto 14 weeks

**Sampling Procedure:** All eligible consecutive cases were enrolled in cases and control group till desired sample size was attained respectively.

**Inclusion Criteria**

- 3 Patient who gave written and informed consent.
- Women with known first trimester pregnancy (upto 14 weeks of pregnancy) who were referred to our department with or without abdominal pain, vaginal bleeding and suspected extrauterine pregnancies.

**Exclusion Criteria**

- Pregnant women who had already been treated with methotrexate for ectopic pregnancy
- Women with a known chronic or acute inflammatory condition (e.g. inflammatory bowel disease, or arthritis, lupus vasculitis, heart diseases, pneumonia, burns, trauma).
- Steroid/NSAID users or taking drugs like thiazolidinenone and statins.

**Methodology**

- All eligible patients fulfilling inclusion criteria were explained about nature and purpose of the study.
- After taking their informed and written consent, detail history, general and systemic examination were done.
- Patients venous blood samples were collected for LFT in plain vial along with routine blood investigations and USG for foetal well being.

**Observations and Results**

Table 1: Comparison of Mean SGOT, SGPT and Serum Alkaline Phosphatase level between Case and Control

		Case	Control	P-value
SGOT (IU/L)	Mean ± SD	21.20±4.97	20.02±4.97	0.272
	Median	19	18	(NS)
SGPT (IU/L)	Mean ± SD	22.88±8.83	21.88±8.83	0.536
	Median	20	19	(NS)
Serum Alkaline Phosphatase(IU/L)	Mean ± SD	95.61±30.48	89.14±18.80	0.164
	Median	93.75	88	(NS)

Mean SGOT level among cases was 21.20 IU/L and in controls was 20.0 IU/L there was no significant difference among the two groups as p value is 0.272. Similarly, mean SGPT level among cases was 22.88 IU/L while in controls was 21.8 IU/L hence no significant difference among the two groups was seen as p value was 0.5

Although the mean value of serum alkaline phosphatase among cases was 93.5 IU/L and in controls was 89.14 IU/L which was not different statistically as p value is 0.16.

Table 2: Comparison of Mean Total protein, Serum Albumin, Serum bilirubin level between Case and Control

		Case	Control	P- value
Total protein (mg/dL)	Mean ± SD	7.66±0.46	7.42±0.47	0.005 (S)
	Median	8	7	
Serum Albumin(mg/dL)	Mean ± SD	4.12±0.31	3.97±0.31	0.011 (S)
	Median	4	4	
Serum bilirubin(mg/dL)	Mean ± SD	0.52±0.17	0.49±0.08	0.187 (NS)
	Median	1	1	

According to table 2 mean value of total protein was 7.66 mg/dl in cases and in controls was 7.42 mg/ dl which was statistically significant with p value being 0.05.

Mean value of serum albumin was 4.12 mg/dl in cases and in control was 3.97 mg/dl it was statistically significant p value being 0.011.

The mean value of serum bilirubin was 0.52 mg / dl in cases while in controls it was 0.49 mg/dl ; there was no statistical difference as p value came non significant (p=0.18).

**Discussion**

Mean SGOT level among cases was 21.02 IU/L and in controls was 20.0 IU/L there was no significant difference among the two groups. Similarly, mean SGPT level among cases was 22.88 IU/L while in controls was 21.8 IU/L hence significant difference among the two groups was not seen as p value was 0.53. Although the mean value of serum alkaline phosphatase among cases was 93.5 IU/L and in controls was 89.14 IU/L which was not different statistically as p value is 0.16. These results are similar to study by RIA Fenuku 1982<sup>6</sup> and Bacq M <sup>7</sup> 2013 where during

normal pregnancy serum routine liver function tests remain below the upper limits established in non – pregnant women.

Mean value of total protein was 7.66 mg/dl in cases and in controls was 7.42 mg/ dl which was statistically significant with p value being 0.05.

Mean value of serum albumin was 4.12 mg/dl in cases and in control was 3.97 mg/dl it was statistically significant p value being 0.011. These results are similar to the study by R.I.A Fenuku 1982<sup>6</sup> where mean serum total protein and albumin levels were lower in pregnant women than non-pregnant females.

**Conclusion**

SGOT and SGPT higher in cases as compare to control.

**References**

1. Boggess KA, Lieff S, Murtha AP, Moss K, Jared H, Beck J, et al. 2005. Maternal serum C-reactive protein concentration early in pregnancy and subsequent pregnancy loss.
2. Bek KM, Nielsen FR. Qvist I, Rasmussen PE, Tobiassen M. C-reactive protein (CRP) and pregnancy.
3. Sacks GP, Seyani L, Lavery S, Trew G. Maternal C-reactive protein levels are raised at 4 weeks gestation. Hum Reprod 2004;19:1025–30.
4. Wolf M ,Sandler First trimester c-reactive protein and subsequent gestational diabetes 2003 ; 819-824
5. IlletWS, Francis T. Serological reactions in pneumonia with a non-protein somatic fraction of Pneumococcus. J Exp Med (1930) 52 (4): 561–71.10.1084/jem.52.4.561
6. Gewurz H, Mold C, Siegel J, Fiedel B. C-reactive protein and the acute phase response. Adv Intern Med (1982) 27:345–72.

7. RI Fenuku Serum total protein, albumin and globulin of pregnant and lactating ghanaian women Journal tropical paediatrics 1982.
8. Y Bacq 2013 The liver in normal pregnancy- Madame Curie Bioscience Database NCBI Bookshelf