and non-GDM groups. All the statistical processes were carried out using SPSS version 15 and P-value <0.05 was considered as significant.

3. Result

All studied groups belonged to the age group of 25-35 and the mean age was 30.5 ± 2.45 ,28.35 ± 3.58 and 29.8 ± 2.98 year in GDM, control and Non GDM respectively. Random blood sugar in terms of mean ± SD in Non GDM was (97 ± 10.7), this increased was highly significant (t, df, p) (40.49, 19, p<0.0000) when compared with age matched normal healthy control (81.7± 8.06). Random blood sugar in terms of mean ± SD was (170.2 ± 91.6) in GDM, this increased was highly significant (t, df, p) (8.30, 19, p<0.0000) when compared with age matched normal healthy control. FBS in terms of mean ± SD was (81.35 ± 5.26) in Non GDM, this increased was highly significant (t, df, p) (69.10, 19, p<0.0000) when compared with age matched normal healthy control (76.6 ± 9.15). FBS in terms of mean ± SD was (96.8 ± 24.8) in GDM, this raised was highly significant (t, df, p) (17.39, 19, p<0.0000) when compared with age matched normal healthy control (76.65 ± 9.15). Post Prandial glucose levels in terms of mean ± SD was (113.5 ± 10.07) in Non GDM. This increased was highly significant (t, df, p) (50.42, 19, p<0.001) when compared with a normal healthy control group. Post Prandial glucose levels in terms of mean ± SD was (160.4 ± 21.11) in GDM. This increased was highly significant (t, df, p) (33.96, 19, p<0.001) when compared with a normal healthy control group. One hour GTT in terms of mean ± SD was (139.3 ± 19.78) in Non GDM, this increased was highly significant (t, df, p) (31.49, 19, p<0.0000) when compared with age matched normal healthy control (101.85 ± 10.59). One hour GTT sugar in terms of mean ± SD was (198.0 ± 29.53) in GDM, this raised was highly significant (t, df, p) (29.98, 19, p<0.0000) when compared with age matched normal healthy control (101.85 ± 10.59). Two hour GTT in terms of mean ± SD was (98.15 ± 8.08) in Non GDM, this mean difference was highly significant (t, df, p) (54.27, 19, p<0.0000) when compared with age matched normal healthy control (84.05 ± 11.02). Two hour GTT sugar in terms of mean ± SD was (179.10 ± 37.94) in GDM, this raised was highly significant (t, df, p) (21.10, 19, p<0.0000) when compared with age matched normal healthy control (84.05 ± 11.02). HbA1C levels in terms of mean ± SD was (4.75 ± 0.50) in Non GDM. This increased was highly significant (t, df, p) (42.17, 19, p<0.001) when compared with a normal healthy control group. HbA1C levels in terms of mean ± SD was (5.79 ± 1.2) in GDM. GLT levels in terms of mean ± SD was (109.9 ± 21.9) in Non GDM. This increased was highly significant (t, df, p) (22.40, 19, p<0.001) when compared with a normal healthy control group. GLT levels in terms of mean ± SD was (188.4 ± 18.1) in GDM.

4. Discussion

The time of screening was generally between the 24th and 28th week of gestation. In RBS and PP glucose level is significant in GDM patient having history of PCOS compare with control. This study show that the insulin resistance increase as in pregnancy than the non pregnant women. The priming of the fetal beta cells may account for the persistence of fetal hyperinsulinemia throughout pregnancy and the risk of accelerated fetal growth. The present study supports that GLT in Non GDM and GDM was significantly high as compare to Control.

GLT level was significanlty increased in Non GDM as compare to control, while in GDM it was also significantly increased as compare to control and Non GDM. WHO criteria based on glucose concentration 2 h after 75 gm glucose load was able to correctly identify subjects with GDM (Pettitt DJ, *et.al*; 1994) The present study support that the GCT or GLT (75 gm- 2 hour GLT) can be used for diagnosis of GDM having history of PCOS. The present findings support the hypothesized association between GDM study that suggest the 18-month follow-up, a significant improvement in the OGTT parameters and in the IGT and IFG-IGR incidence were observed in the control group. Statistical significance compared with the controls for all end points except DM, which was likely due to the small sample studied. The present study finding was against the previous study finding that show no significant (P = 0.776) difference between the GDM cases and controls was detected in the incidence of patients with IGT (6 [14.3%] vs. 14 [16.7%], respectively) and IFG (5 [11.9%] vs. 15 [17.9%], respectively. HbA1C were higher in GDM group than those in control, Non GDM group, and these findings support the hypothesized association between GDM and subsequent PCOS and metabolic syndrome women in whom glucose intolerance was diagnosed in early pregnancy as pre GDM, GDM, or normal glucose tolerant.

5. Conclusion

This study concluded that the diagnosis of GDM is done in 24 – 28 week of pregnancy. Women with PCOS who want to have children must be informed about the increased risk for developing GDM in their pregnancies. Metabolic findings in PCOS include increased. Insulin resistance, dyslipidemia, and elevated androgen levels - often accompanied by infertility and infertility treatments in order to achieve pregnancy. Confounding factors, such as obesity and the diverse ovulation induction treatments in infertile women with PCOS, can be considered potentially risk-increasing variables. Those coexisting factors, together with additional predisposing factors, such as a positive family history for diabetes mellitus, have been suggested to correlate with a generally increased risk for developing GDM and impaired glucose tolerance (Toulis et al., 2009).

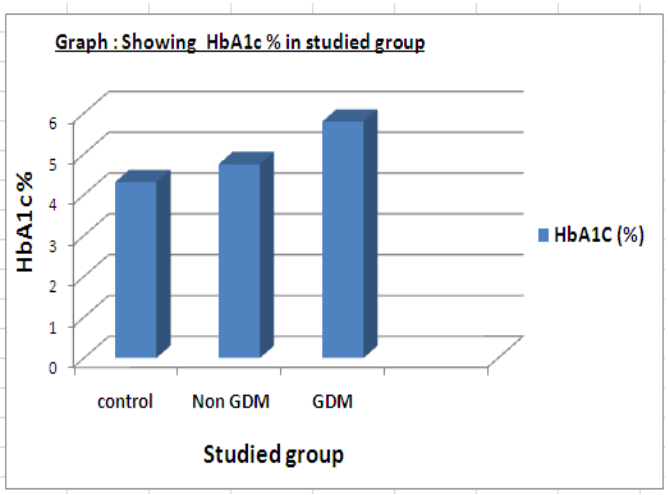
Comparable pathophysiological mechanisms of insulin resistance and impaired glucose tolerance can be found in GDM and in women with PCOS who demonstrate an increased tissue resistance to insulin. However, the exact pathophysiological link between PCOS and GDM has not yet been fully elucidated.

Table: Showing the blood glucose level (mg/dl) in the studied blood glucose test and value of HbA1c in control ,Non GDM and GDM subject.

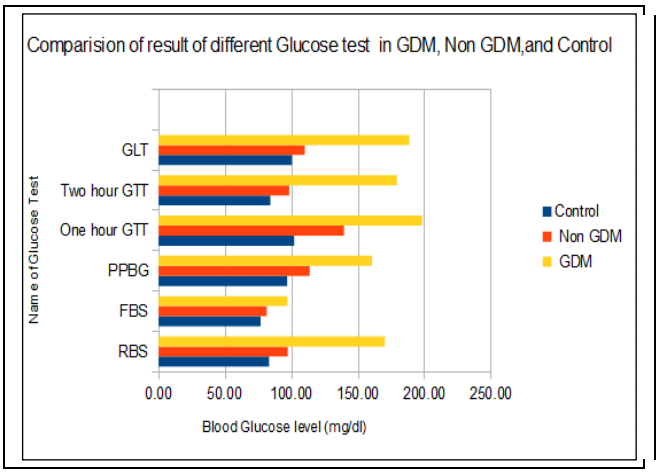
Name of test	Blood Glucose Level (mg/dl)			
	control	**Non GDM**	**GDM**	P- value
RBS	81.7 ± 8.066	97±10.711	170.25±91.65	a/b/c =.000
FBS	76.65 ± 9.155	81.35±5.264	96.8±24.88	a/b/c =.000
PP	96.65 ± 13.07	113.55±10.07	160.4±21.119	a/b/c =.000
One hour GTT	101.85±10.599	139.3±19.783	198±29.531	a/b/c =.000
Two hour GTT	84.05 ± 11.023	98.51±8.086	179.1±37.984	a/b/c =.000
HbA1C (%)	4.31 ± 0.512	4.75±0.5041	5.79±1.299	a/b/c =.000
GLT	100.1 ± 7.210	107.9±21.93	188.4±18.126	a/b/c =.000

a- P value control versus Non GDM , b- P value the control versus GDM,c- P value NonGDM versus GDM

Graph: Showing HbA1c % level comparison in GDM, Non GDM and Control



Graph: Showing blood glucose level comparision in different glucose test in GDM,Non GDM and Control



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