A blue stethoscope is positioned in the top right corner of the slide, partially overlapping the white background.

STUDY OF EFFECT OF THIAZOLIDINEDIONES (PIOGLITAZONE) ON THE C-REACTIVE PROTEIN (CRP) LEVEL OF TYPE-2 DIABETIC PATIENT


Presented by:

Dr. Md. Zahirul Haque


FCPS

Assistant Professor of Medicine

Rajshahi Medical College



Type-2 diabetes mellitus affects millions of people in Bangladesh and its incidence is increasing at an alarming rate.



A key underlying feature of type-2 diabetes is insulin resistance, which is associated with increased macrovascular risk due to induction of **chronic inflammation** which leads to atherosclerotic change in the vessels



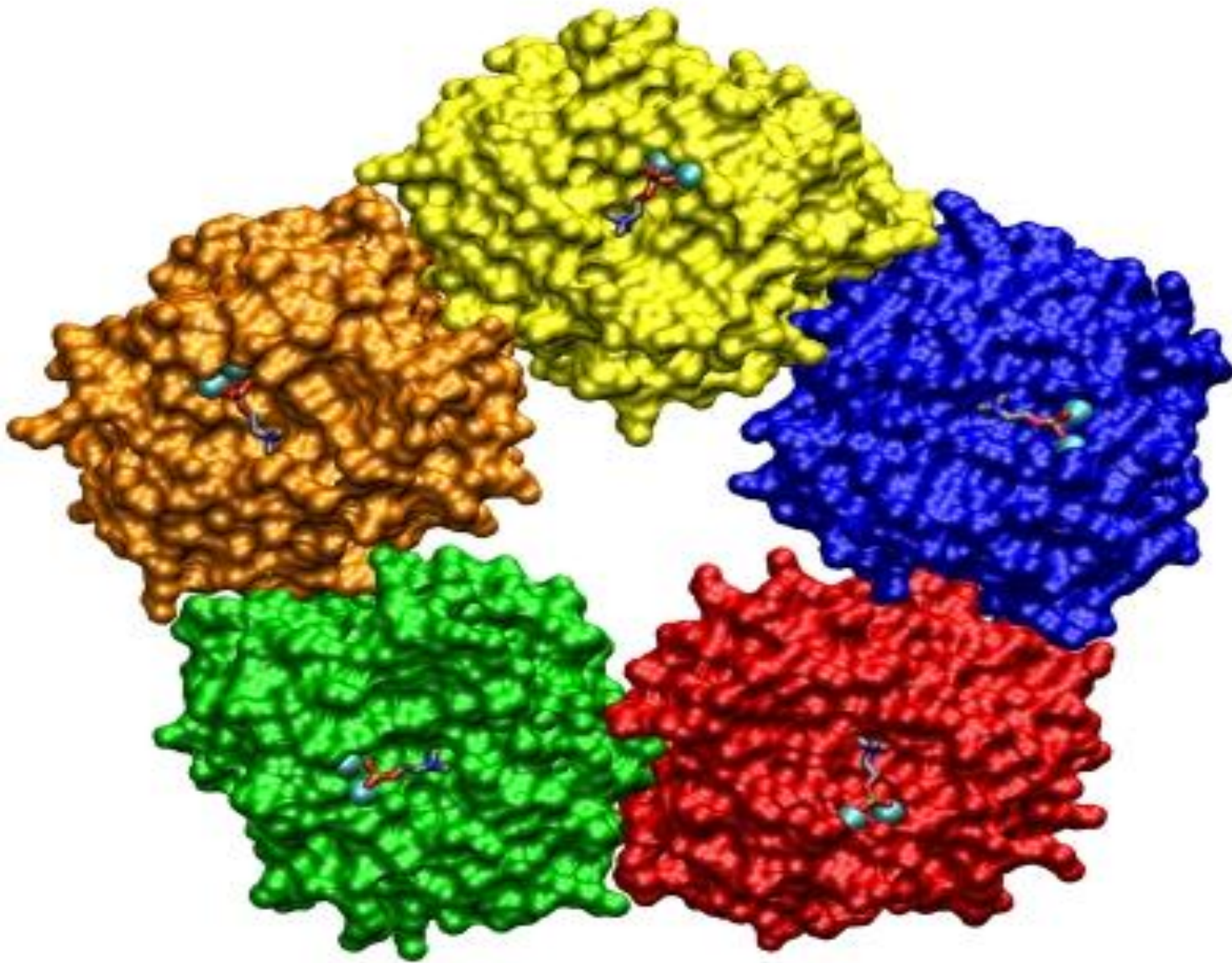
CRP is a non-specific indicator of inflammation and it is directly associated in atherosclerotic plaque formation

Elevated CRP appears to be a better predictor of risk of heart attack than an elevated cholesterol level.



The investigators recommend CRP as a useful marker for evaluation of absolute risk for cardiovascular disease

In diabetes, high-sensitivity C-reactive protein (CRP) levels are elevated





Thiazolidinediones (pioglitazone, rosiglitazone) are a group of drugs used to treat type-2 diabetic patients.

Our study was conducted to determine the **role of thiazolidinediones (pioglitazone) on hs-CRP in type- 2 diabetic patients**

Method



- Hospital based surveillance study, done in Diabetic Shomiti Hospital, Rajshahi
- **Total 70** type-2 diabetic patients aged 40 to 60 years



- 35 patients - *control group* - treated with glimepiride (1 to 6 mg)
- 35 patients - *case group* - treated with pioglitazone 30 mg daily on morning
- The drugs were given for *12 weeks* of time.



Biochemical and clinical markers including

- HbA_{1c}
- FBS
- 2ABFG
- hs-CRP
- Lipid profile

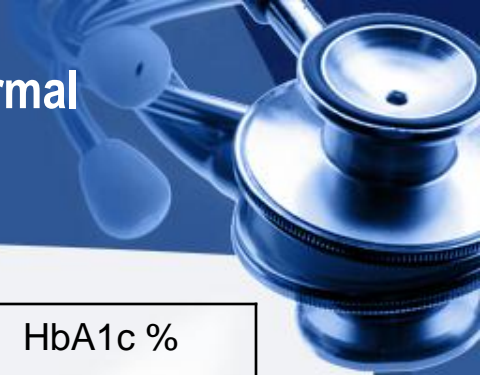
were recorded before and after drug intervention.

Side effects of drugs were also recorded during and at end of drug intervention

Results



Distribution of Glycemic status and hs-CRP level among the normal people and type-2 diabetic patients



Respondent's group		Respondent's age	FBS mmol/L	hs-CRP mg/L	HbA1c %
Type-2 diabetic patients	Mean	46.54	9.8629	1.1257	8.7914
	N	35	35	35	35
	Std. Deviation	6.505	3.10967	1.58310	1.45347
Normal healthy people	Mean	47.97	5.6129	0.3883	5.6171
	N	35	35	35	35
	Std. Deviation	5.448	1.11963	0.24343	0.37376

Fig. 1 : Age and Gender distribution of the study population (Case group).

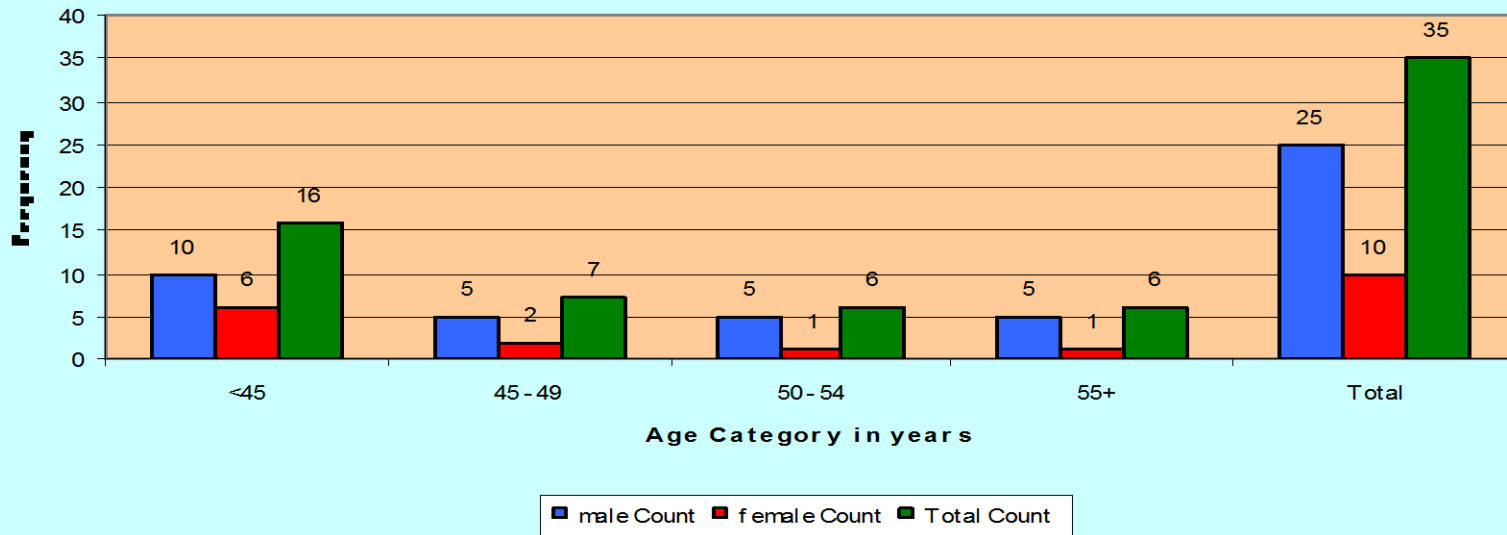
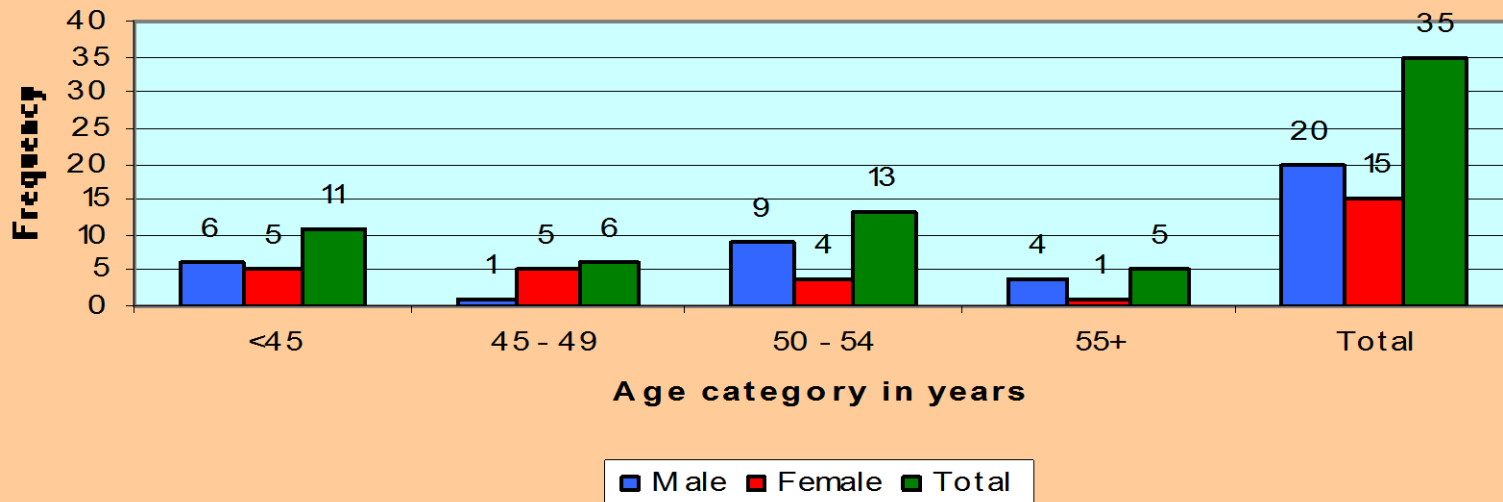


Fig. 2 : Age and Gender distribution of the study population (Control group).



Glycemic status of the study population (case and control) before and after drug intervention



	Respondent's group					
	Respondent's gender Case			Respondent's gender Control		
	Male	Female	Total	Male	Female	Total
	Mean	Mean	Mean	Mean	Mean	Mean
FBS before drug	10.15	9.14	9.86±3.11	6.86	8.04	7.72±1.95
FBS after drug	8.50	7.67	8.26±2.71	7.16	8.46	7.37±3.02
2ABFG before drug	15.93	13.18	15.14±4.99	9.57	11.07	10.21±4.34
2ABFG after drug	11.69	11.23	11.56±4.88	9.32	10.24	9.71±5.14
HbA1c% before drug	9.02	8.21	8.79±1.45	7.23	7.38	7.29±0.83
HbA1c% after drug	8.11	7.52	7.94±1.46	6.82	7.31	7.03±1.12

Distribution of High sensitive C-reactive protein (hs-CRP) of study population

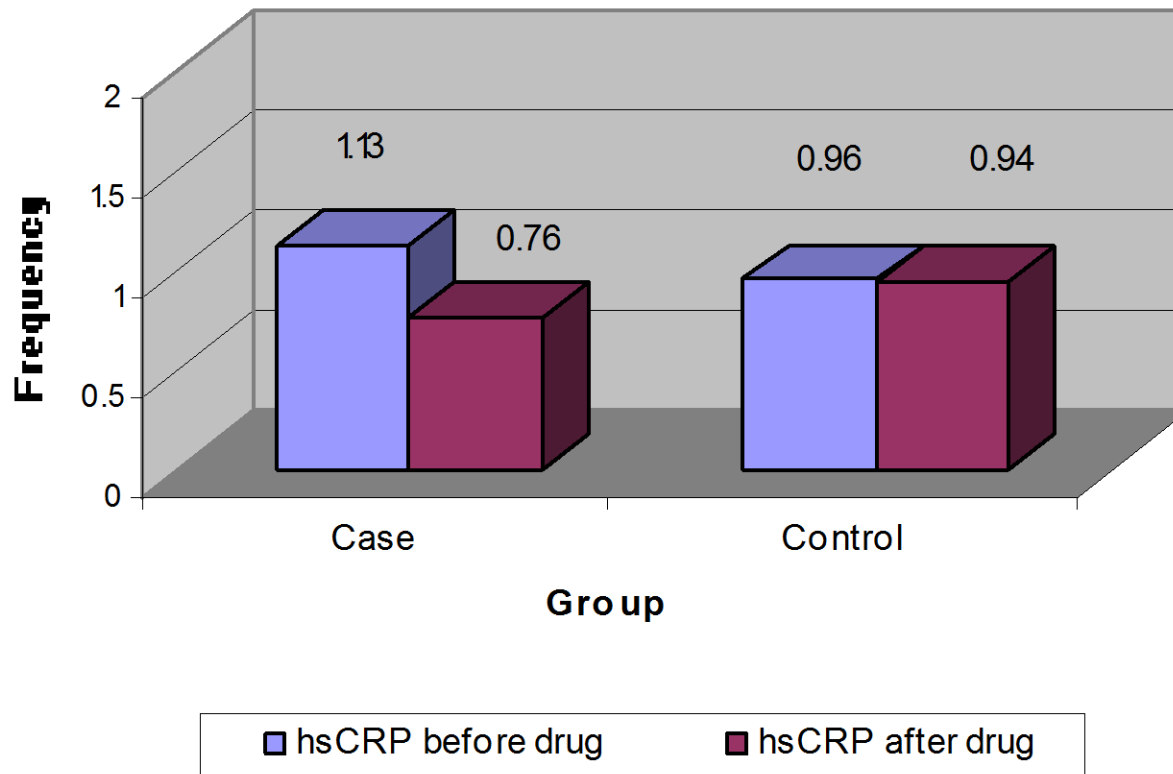


	Respondent's group					
	Respondent's gender Case			Respondent's gender Control		
	Male	Female	Total	Male	Female	Total
	Mean	Mean	Mean	Mean	Mean	Mean
hs-CRP before drug	1.27	0.78	1.13±1.58	1.12	0.74	0.96±1.59
hs-CRP after drug	0.76	0.76	0.76±1.25	0.95	0.93	0.94±1.50
Difference of hs-CRP before and after drug intervention	0.51	0.20	0.37±1.42	0.17	-0.19	0.02±1.45

Mean change of hs-CRP (mg/L) status of the study population before and after drug



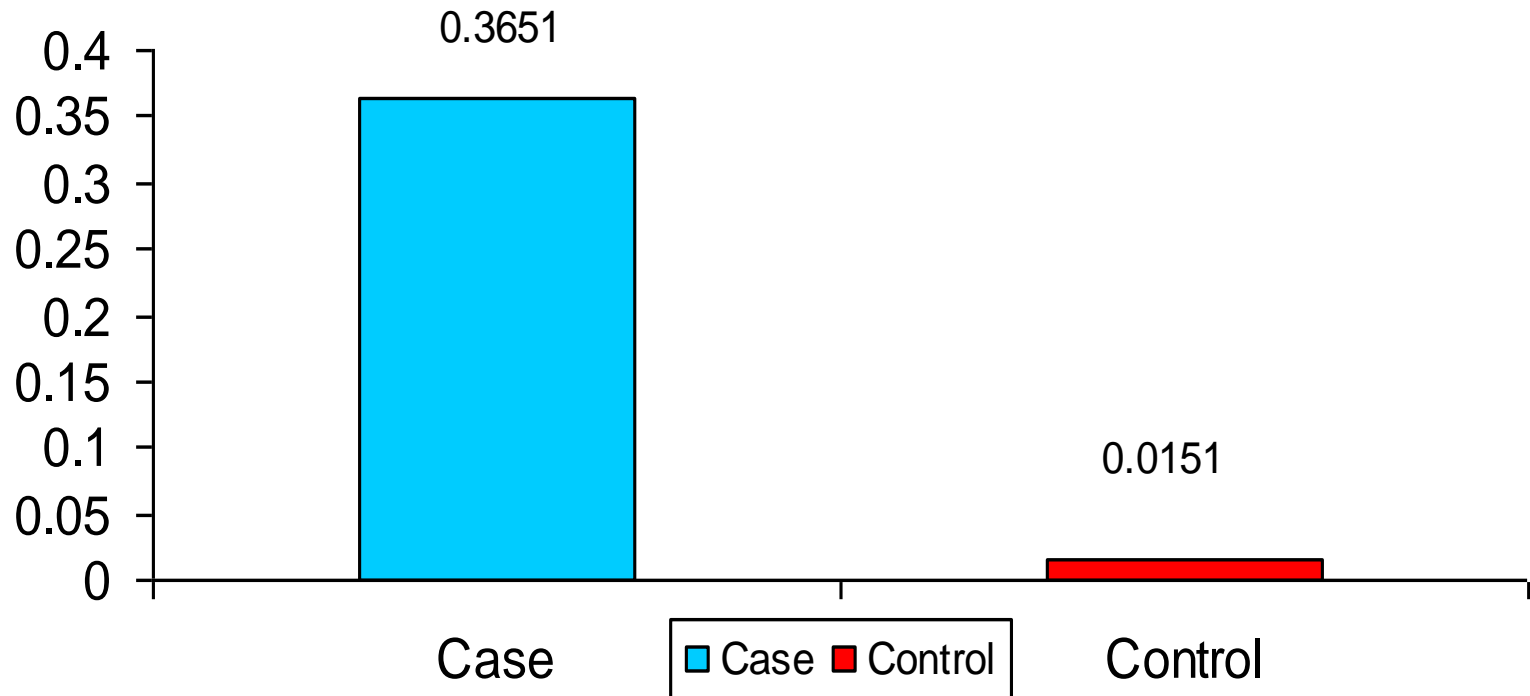
Fig.: Mean changes of hsCRP(mg/L) of the Respondents before and after drug.



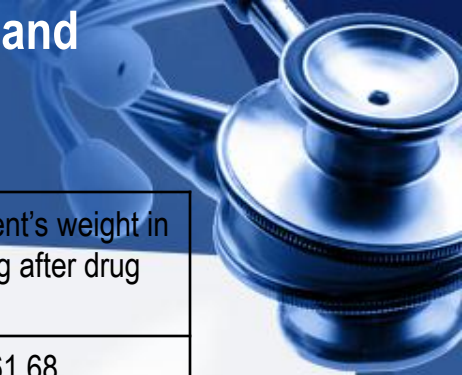
Change in the hs-CRP status of the study population after drug



Fig.: Change in hsCRP status of the Respondents after drug.



Distribution of the mean weight (kg) of the study population before and after drug



Respondent's group	Respondent's gender		Respondent's weight in Kg before drug	Respondent's weight in Kg after drug
Case group	Male	Mean	60.68	61.68
		N	25	25
		SD	9.886	9.835
	Female	Mean	55.60	56.50
		N	10	10
		SD	6.995	7.352
	Total	Mean	59.23	60.20
		N	35	35
		SD	9.347	9.393
Control group	Male	Mean	59.25	59.25
		N	20	20
		SD	11.580	11.111
	Female	Mean	51.73	51.73
		N	15	15
		SD	6.798	6.734
	Total	Mean	56.03	56.03
		N	35	35
		SD	10.402	10.095

CONCLUSION



This study gives evidence of an **anti-inflammatory effect** of pioglitazone versus glimepiride.

The effect of pioglitazone on reducing inflammatory marker is **independent from blood glucose control.**

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Thank You

