



THE PATIENTS SUFFERING FROM COVID19 MAY INCUR PANCREATIC DYSFUNCTION IN THE FORM OF DIABETES AND ITS EARLY COMPLICATION AS EVIDENCED BY HbA1c AND URINARY ALBUMIN CREATININE LEVEL: HOSPITAL BASED OBSERVATIONAL CROSS-SECTIONAL STUDY

Dr Sourish Ghosh

Resident, Dept of Biochemistry, Medical College Kolkata

Dr. Santu Mondal

Resident, Dept of Biochemistry, Medical College Kolkata

**Dr Sidhartha
Bhattacharya***

Senior Resident, Dept of Biochemistry, Medical College Kolkata *Corresponding Author

ABSTRACT **Introduction** – COVID19 can cause widespread destruction to multiple organs including different endocrine systems of the body. In previous study it has been found that pancreatic dysfunction can be a feature of this inflammation. We want to delineate whether this pancreatic dysfunction results in development of Diabetes mellitus as evidenced by rise in HbA1c and early detection of nephropathy as evidenced by rise in Urinary albumin creatinine ratio. **Materials & method** – We took 50 RTPCR positive confirmed case of COVID19 who had no history of poor glycaemic control & with normal glomerular function within the age group of 20 to 60 years. We measured the prevalence of HbA1c & urinary albumin creatinine ratio among them. We also calculated strength of association of any between these two parameters as described above. **Result** – There is an increased prevalence of HbA1c & urinary albumin creatinine ratio in our study population. We have also found a positive correlation in between HbA1c & urinary albumin creatinine ratio. **Conclusion** – We can conclude that this dreaded COVID19 infection can cause poor glycaemic control as evidenced by raised HbA1c levels and development of early microvascular complications as detected by increased urinary albumin creatinine ratio levels & thus warrant for detection and control of this dysfunction as early as possible.

KEYWORDS : HbA1c, Urinary ACR, COVID 19

INTRODUCTION

COVID19 can cause widespread destruction to multiple organs including different endocrine systems of the body. In previous study it has been found that pancreatic dysfunction can be a feature of this inflammation. We want to delineate whether this pancreatic dysfunction results in development of Diabetes mellitus as evidenced by rise in HbA1c and early detection of nephropathy as evidenced by rise in Urinary albumin creatinine ratio. We have seen also the pathophysiology of this infection changed dramatically. Previously it was thought to be an interaction between inflammatory cells and virus particle but now the focus is shifted more towards multisystem autoimmune involvement. In this scenario we come up with a study to look out for the effect of the onslaught of this dreaded disease to the endocrine system and particularly pancreas.

OBJECTIVE

- To measure the prevalence of HbA1c & urinary albumin creatinine ratio among study population.
- To find if there is any correlation in between HbA1c & urinary albumin creatinine ratio in the study population

MATERIALS & METHODS

A comparative study including 50 RTPCR positive confirmed case of COVID19 who had no history of poor glycaemic control & with normal glomerular function within the age group of 20 to 60 years.

- Study design: Cross sectional study
- The Age group for the study was 20 – 60 years.
- RTPCR positive confirmed case of COVID19

Inclusion Criteria -

50 RTPCR positive confirmed case of COVID19 who had no history of poor glycaemic control & with normal glomerular function within the age group of 20 to 60 years

Exclusion Criteria -

Patients with diabetes mellitus, hypertension, dyslipidaemia, renal and liver failure and other endocrine disorders were excluded from the study.

- We have also taken into consideration the mean and SD of HbA1c and urinary albumin creatinine ratio among general individuals from previous studies as per International diabetes federation atlas, 4th edition and CURES 45 study.

RESULTS & DISCUSSION

Results are presented as MEAN±SD

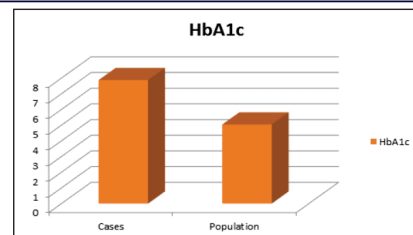


Chart 1: Bar diagram showing HbA1c variation

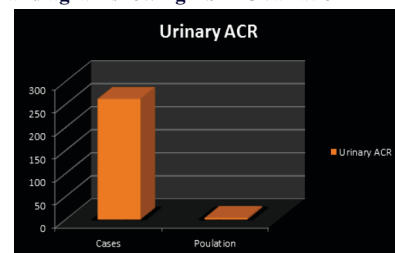


Chart 2: Urinary albumin creatinine ratio Variation

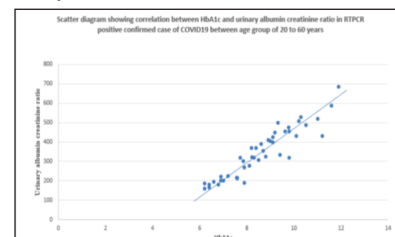


Chart 3: Scatter Diagram between HbA1c and Urinary ACR in Covid -19 cases

From the Above results reflecting in charts we can say that in Covid cases the prevalence is significantly high in HbA1c and Urinary ACR levels as compared to general population.

We have also found that there is a strong positive relation in HbA1c levels as compared with Urinary ACR levels.

Summary and Conclusion

We can conclude that this dreaded COVID19 infection can cause poor glycaemic control as evidenced by raised HbA1c levels and

development of early microvascular complications as detected by increased urinary albumin creatinine ratio levels & thus warrant for detection and control of this dysfunction as early as possible.

The limitations of the present study are as follows:-

The study was undertaken in only 50 individuals suffering from COVID19 which is a very small group. So, statistical correlation and linearity cannot be assessed properly.

Confounding factors were not taken into account for this particular study.

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