

COMPARISON OF HbA1c LEVELS IN SMOKERS AND NON SMOKERS

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ABSTRACT

Background

Cigarette smoking is a commonly encountered redox state that is known to cause transient elevation in plasma glucose levels. The effect of smoking on long term plasma glucose concentration can be studied by measuring the levels of HbA1c.

Aim

To compare the HbA1c levels in smokers and nonsmokers in order to study the influence of nicotine exposure on long term glucose homeostasis and development of diabetes and its complications.

Materials and Methods

42 adult males in the age group of 24-54 years were recruited for the study. Out of this 20 were smokers and 22 were non smokers. We compared the BMI, Waist/hip ratio, systolic and diastolic BP and HbA1c levels of the cases and controls.

Results

The recorded variables were analyzed using student 't' test. Compared to non smokers, smokers had lower BMI, higher Waist/hip ratio, higher systolic and diastolic BP and higher HbA1c levels.

Conclusion

As smokers had higher levels of HbA1c compared to non smokers, the role of tobacco smoking in producing a sustained increase in the plasma glucose levels have been proved by this study. Nicotine present in tobacco smoke has been implicated in the development of diabetes mellitus and its complications through various mechanisms. Therefore cessation of smoking is important for preventing the development of diabetes and for achieving proper glycemic control and limiting the development of complications in diabetic individuals.

KEYWORDS: Beta-Cells, Diabetes Mellitus, HbA1c, Insulin, nAchRs, Nicotine, Non Smokers, Smokers, Tobacco Smoking