



**COMPARISON BETWEEN LFT, LIPID PROFILE, CBC WITH
MICROSCOPY OF BLOOD CELLS AND SERUM CRP LEVEL IN
SMOKERS, TOBACCO CHEWERS AND HEALTHY CONTROL**

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Abstract:

Tobacco consumption, in the form of smoking and chewing, is a prevalent habit globally, with a significant presence in India, particularly among the youth. This habit is associated with increased risk of various pathological conditions, which can be detected through alterations in biochemical parameters. This study recruits smokers, tobacco chewers, and healthy controls, and their blood samples are analyzed for LFT, lipid profile, CBC with microscopy of blood cells, and serum CRP levels. This study aims to provide insights into the alterations of these biochemical parameters in smokers and tobacco chewers, which can serve as early indicators of various diseases. The findings of this study will be useful in identifying the high-risk groups and implementing preventive measures to reduce the burden of tobacco-related diseases.

Keyword: Tobacco, Lipid profile, CBC, Diseases, CRP Level

1. Introduction:

Tobacco chewing and smoking is a vice that has been practiced by a millions of people in all over the world. It is estimated that among 400 million individuals aged 15yrs and above in India, 47% use tobacco in one or other form^[1]. It is compounded by the fact that the rate of tobacco



consumption in one or other form is increasing in the youth of the country. Tobacco is the single greatest cause of preventable death globally^[2]. In smokers and tobacco chewers alteration of relevant biochemical parameters may be indicative of onset of progress of many pathological conditions^[2]. Therefore we decided to study and compare the liver function test, complete blood count with microscopy of blood cells, serum C- Reactive protein level, and lipid profile of smokers, tobacco chewers and healthy control, So that their level will be used as predictive value in management of tobacco consumers.

2. Objectives:

Aim of the present study and comparison is to find of the effect of tobacco chewing and smoking on liver function test, serum C-RP level, lipid profile and complete blood count and morphology of the blood cells.

3. Material and Methods:

Proposed research is to be carried out in GMERS Medical college and Hospital, Valsad, Gujarat. The study is to be done in subjects with age group of 20 to 40 years. The subjects will be studied in three groups as (1) Healthy control, (2) Smokers, (3) Tobacco chewers.

The inclusion criteria are that subjects must be having such habit of tobacco consumption as smoking or chewing atleast since 5 years.

Exclusion criteria are those that are unable to understand and follow the verbal instructions; presence of cardiovascular disorders or respiratory disorder or any pathological conditions, or any history of such conditions.

Fasting blood sample is to be collected for the following tests;

3.1 Liver function test includes estimation of (1) Alanine transaminase and Aspartate transaminase both by UV kinetic method^[3], (2) Direct and total Bilirubin: by dichloroaniline



method^[4], (3) Alkaline phosphatase: by pNPP kinetic method^[5], (4) Albumin estimation: by bromocresol green method^[6].

3.2 Lipid profile include estimation of (1) total cholesterol: by trinder's method^[7](2)triglyceride: by GPO – trinder's method^[8](3)LDL: by LDL direct reagent^[9] (4)HDL: by HDL reagent and (5)VLDL: Friedewald's equation^[10] as $VLDL = \text{triglyceride}/5$

Quantitative analysis of all these methods is done by semi auto analyzer machine.

3.3 Complete blood count involves 1. Hb, 2.Total WBC count, 3.differential WBC count, 4.Total RBC count, 5. Platelet count : by automated machine.and 6.Calculation of RBC Indices such as PCV, MCV, MCH, MCHC.

Microscopy involves observing the blood cells under the microscope.

3.4 Serum C-RP estimation is to be done by C-RP slide test^[11].

4. Implications:

The study and comparison of effects of tobacco chewing and smoking with healthy control on such parameters as Liver function, Lipid profile, serum C-RP level, Complete Blood Count with Cell morphology has not been done all together. So this study will be helpful in establishing any correlation in these factors if present. Also any alteration in relevant parameter's normal value will be helpful in early diagnosis of any relevant pathological condition.

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