SUMMARY AND CONCLUSION

Leprosy does not only handicap a person physically but it does hurt the sufferer socio-economically and psychologically. It is widely distributed in all parts of the world and in India an estimated 4.0 million people suffer from leprosy. Traditionally leprosy is classified into three subtypes i.e. Tuberculoid (TT), Borderline (BB) and Lepromatous (LL). Ridley and Jopling (1966) added two intermediary categories e.g. borderline with tuberculoid features (BT) and borderline with lepromatous features (BL). Thus TT, BT, BB, BL, LL comprise a spectrum in continuity. TT patients have highest immunity and other groups have immunity in descending order with lowest in LL patients.

In the present study, cellular immunity was assessed in different types of leprosy patients with estimation of T and B cells in peripheral blood. Along with this, the status of T and B cells in leprosy patients with and without reaction has been studied as leprosy reaction (acute spurt of chronic disease) is supposed to have an immunological background.

The studies have been conducted on patients suffering from various types of leprosy, admitted in the ward or attending the out patients department of Skin and VD. A thorough clinical examination was done and diagnosis
was established by biopsy. All the cases were classified according to Ridley and Jopling (1966) classification into five groups as mentioned above. The T and B lymphocyte counts have been done using E-rosette and EAC rosette techniques. T and B lymphocyte percentage have been calculated from total and differential counts.

There is significant quantum of host pathogen interaction (pertaining to immunity) before disease is manifested into different subtypes. The sudden spurt of disease activity during chronic course termed as 'reaction' has also immunological basis. The leprosy cases have been further divided into non reaction and reaction cases. The status of T and B lymphocytes was seen in these two groups with different types of leprosy.

In this study 60 persons were included. Healthy fifteen formed the control group, and forty five were the patients with various types of leprosy. The maximum number of patients had lepromatous (28.38%) type of leprosy followed by tuberculoid (24.44%) and borderline (24.44%) types of leprosy. The maximum number of patients were between the age of 21 and 40 years and were predominantly male. This is because the lepromatous type of leprosy is highly infective variety and males are very often exposed to external environment falling prey to infection.
About 50% of cases suffered from systemic manifestations as fever. Almost all (nine out of ten) cases of lepromatous type suffered from erythema nodosum leprosum.

All the clinically diagnosed lepromatous cases were confirmed histopathologically while in other types there was minor variation between clinical diagnosis and histopathological diagnosis. It was noted in this study that patients suffering from borderline or lepromatous type of leprosy may show any type of histopathological change pertaining to disease.

The T cell percent gradually declined from TT to LL type in comparison to control from 57.65 ± 2.51 to 42.0 ± 3.20. This is because of lower cell mediated immunity. The T cell percent in all leprosy cases is significantly lower than control cases. The T cell percent in control and TT type of leprosy is almost equal because of high degree of immunity in TT cases. From TT to LL types, the T cell percent gradually declined and the difference in T cell percent between these groups was statistically significant. It shows the presence of lower immunity status in descending order from TT to LL types.

T cell population in reaction and non reaction cases was also studied. In borderline non reaction cases the T cell percentage was significantly higher than reaction cases (p < 0.05).
In contrast to T cell, B cell percentage gradually increased from TT to LL type. The difference in the B cell percentage between different groups is significant. The B cell percent between reaction and non reaction cases were compared and no statistically significant difference was noted.

It is concluded from the present study that Thymus dependent lymphocytes (T cells) which are responsible for cell mediated immunity are decreased in leprosy in comparison to normal individuals. Conversely, Bursa dependent lymphocytes (so called B cells) which are responsible for humoral immunity are increased in leprosy. Furthermore, T cells show a gradual decrease as the disease progresses from tuberculoid to lepromatous stage. The B cell count shows opposite changes. Excepting borderline apparently no change was observed in T and B cell status in leprosy cases with reaction as compared to those who had no reaction. However, this conclusion may not be correct in absolute terms. It is presumed that downgrading reactions and upgrading reactions having opposite immunological status should have opposing influence on T cells. In the present study, reaction cases were not studied separately as upgrading and downgrading reactions and hence any change in T cell status in different reaction types, even if existing, was nullified.