Chapter 1
INTRODUCTION

Diabetes mellitus is a major disabling disease that gives rise to various systemic complications. The number of persons affected by diabetes has been increasing worldwide, and approximately 300 million people are expected to be affected by the year 2025. Although type II diabetes has a strong familial tendency, it has almost reached epidemic proportions in developing countries; this is probably a reflection of changes in socioeconomic status, lifestyle and diet. Type I diabetes, thought to be primarily autoimmune in nature, is also increasing in prevalence for unknown reasons. Diabetic patients are required (due to the disposition of their condition) to have sufficient knowledge regarding their illness so as to exhibit a positive attitude to health care. Though there is increased tendency of blindness in diabetic patients, studies have shown that most diabetic patients do not seek the recommended ocular examinations (such as regular dilated fundus examination) aimed at preventing visual impairment and blindness. It is therefore very essential that patients' knowledge on the ocular manifestations of diabetes be ascertained, to determine if this is the barrier to seeking recommended eye examination among the diabetic population in our country. Diabetic patients suffer many systemic complications including ocular disorders due to which people living with diabetes are about 25 times more likely of becoming blind compared to the normal population. The incidence of vision loss or blindness due to ocular complications of diabetes raises sufficient public health concern, with diabetic retinopathy alone responsible for 12,000 to 24,000 new cases of blindness yearly in the United States.

Diabetes mellitus is a syndrome characterized by chronic hyperglycemia and disturbances in carbohydrate, protein and fat metabolism associated with absolute or relative deficiencies in insulin secretion or it's action. The metabolic dysregulation associated with diabetes mellitus causes secondary

pathophysiological changes in multiple organ systems that cause a tremendous burden on the individual diabetes.

Diabetes' detrimental effects on multiple organ systems like eye, renal system, heart and nervous system results in diabetic retinopathy, nephropathy and neuropathy by microangiopathy. Its a microangiopathy affecting precapillary arterioles, capillaries and venules and presents itself either as non-proliferative diabetic retinopathy, maculopathy or proliferative diabetic retinopathy. The fact that the onset of moderate and severe visual lossresulting from diabetic retinopathy can be delayed and often kept controlled by good glycemic control, timely intervention in arresting the advancement of retinopathy, early treatment and regular follow-up has been extensively studied and documented. Effective control of risk factors including hyperglycemia, elevated blood pressure and hyperlipidemia delays progression of microangiopathy.

The ocular complications of diabetes mellitus are also numerous and include retinopathy, cataract, ocular surface disorders, uveitis, glaucoma and neuro-ophthalmic disorders. A review of the current literature shows that the emphasis has changed from the laser and surgical management of pre-existent retinopathy to the development of cohesive multidisciplinary screening and education programs and to a better understanding of the biochemical mechanisms at cellular level that underlie the disease. The role of associated and likely modifiable systemic factors is also now recognized. Early intervention with systemic and local therapies may soon provide hope for the better management of diabetic eye disease.

Some of the main ocular complications of diabetes are described in the upcoming chapters.

1. Retinopathy in diabetes
2. Ocular surface disorders in diabetes
3. Cataract in diabetes
4. Uveitis in diabetes
5. Nerve palsies in diabetes
6. Glaucoma in diabetes