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Introduction

A lipid-lowering medicine belonging to the statin class of drugs is atorvastatin. Statins lower aberrant levels of cholesterol and lipids, which eventually lowers the risk of cardiovascular disease. They achieve this by preventing the liver's endogenous manufacture of cholesterol. More precisely, statin drugs competitively block the HMG-CoA Reductase enzyme, which catalyses the conversion of HMG-CoA to mevalonic acid [1]. The creation of various substances involved in lipid metabolism and transport, including cholesterol, low-density lipoprotein (LDL), sometimes known as "bad cholesterol," and very-low-density lipoprotein, depends on this conversion, a crucial metabolic process (VLDL). For patients who have experienced a cardiovascular event and for those who are at moderate to high risk of developing cardiovascular disease, prescribing statins is regarded as standard treatment. The widespread use of statins in North America is a result of the evidence in favour of their usage, as well as their low risk of adverse effects and long-term advantages [2,3]. A number of dyslipidemias, including primary hyperlipidemia, mixed dyslipidemia, hypertriglyceridemia, primary dysbetalipoproteinemia, homozygous familial hypercholesterolemia, and heterozygous familial hypercholesterolemia in adolescents with failed dietary interventions are treatable with atorvastatin [4]. When high-density lipoprotein levels are present together with elevated plasma cholesterol, triglycerides, or both, the condition is referred to as dyslipidemia. Atherosclerosis is more likely to develop as a result of this disorder. When used in conjunction with dietary changes, atorvastatin is recommended for individuals who have cardiac risk factors and/or abnormal lipid profiles to help avoid cardiovascular events. In individuals without coronary heart disease but with several risk factors, as well as in those with type 2 diabetes and multiple risk factors but no coronary heart disease, atorvastatin can be administered as a preventative medication for myocardial infarction, stroke, revascularization, and angina. In individuals with coronary heart disease, atorvastatin may be used as a preventative measure for non-fatal myocardial infarction, fatal and non-fatal stroke, revascularization operations, hospitalisation for congestive heart failure, and angina.

Following any cardiovascular incident and for persons at moderate to high risk of developing cardiovascular disease (CVD), the prescription of statin drugs is generally accepted as standard therapy [5]. Diabetes mellitus, clinical atherosclerosis (including myocardial infarction,

to observational study findings, between 10 and 15 percent of statin users may develop muscular pain at some time during therapy [8]. Similar to other lipid-lowering treatments, statins have been linked to biochemical abnormalities in liver function. In clinical studies, 0.7% of patients who took atorvastatin experienced persistent increases in serum transaminases (> 3 times the upper limit of normal [ULN] occurring on two or more occasions). This result seems to be dose-dependent [9,10]. The risk of higher blood HbA1c and glucose levels is linked to statin use. An in vitro experiment showed that atorvastatin administration has a dose-dependent cytotoxic impact on human pancreatic islet cells. In addition, insulin secretion rates dropped in comparison to controls [11].

adenoma, and liver carcinoma in investigations on the carcinogenic effects of high dosages of atorvastatin. Aplasia, aspermia, low testis and epididymal weight, reduced sperm motility, decreased spermatid head concentration, and a rise in defective sperm were all observed in