A STUDY ON THE EFFECTS OF STATINS ON EFFECTS OF CEREBRAL ISCHEMIC STROKE

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Abstract:
Objective: Mostly older patients suffer from cerebral ischemic stroke (CIS). To decreasing inability in patient which occurs due to CIS commonly used statins. The objective of our research work to study the effect of statins on the cerebral ischemic stroke patients.
Methodology: The patients of CIS were admitted in Allied Hospital Faisalabad confirmed by the clinical and Para clinical findings during 2018 were enrolled. Before the CIS all participant is using statins up to three months, recovered patient did not use it after recovery. Modified Rankin Scale (MRS) measured method was used for Motor activity. During hospital stay MRS was compared at admission & during discharge time. If the result of motor was same during both condition than it to be consider poor effect.
Results: 230 CIS participants (one thirty women) the average age of all patients was seventy-one years. Those patients who MRS score was less than four was substantially higher in statin group than controls between the duration of admission & during discharge. (All P values is grater 0.001) The total of participants with poor effect was substantially lower in statin group than controls. (P value is grater 0.001) The outcome was uniform when the statin and control patients were adjusted for hypercholesterolemia.
Conclusion: that patient who taking statins in the initial stage of CIS show better result as compared to those patient who had never taken its. It seems sensible to advised statin to decrease motor inability and minimized the risk of CIS in patients.
Key Words: *Cerebral Ischemic Stroke, Motor Activity, Modified Rankin Scale (MRS), Patients, Stroke.*

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INTRODUCTION:

Cerebral ischemic stroke (CIS) is a disorder portrayed by the intense beginning of a neurologic disorder that perseveres for no less than 24 hours. It reflects focal ischemia of the focal nervous system. In United States stroke is consider 3rd Main cause of death and main disabling neurologic disorder. Approximately 750,000 new patients suffer from strokes and it least 150,000 patents die from it in the United States annually. The stroke occurs due to high blood pressure (systolic or diastolic), hypercholesterolemia, tobacco smoking, heavy use of alcohol, and birth control pills use. Cerebral infarction comprises two pathophysiologic processes. One is a loss in the supply of oxygen and glucose secondary to vascular occlusion, and the other, is the changes in cellular metabolism resulting in the collapse of energy producing processes, ultimately leading to disintegration of cell membrane. Statins decrease synthesis of Low-Density Lipoprotein (LDL) by inhibiting the 3-hydroxy-3-methylgluatryl coenzyme A (HMG-CoA) reductase. The benefit of LDL lowering by statins observed in many risk groups may depend not only on their effects on the lipid profile but also on direct modulation of plaque biology independent of lipid lowering.

Table-I: Comparison of Statin Users and Control Groups According to Modified Rankin Scale Status (more or less than 4) at Admission Time

Modified	Modified	Total Rankin	Rankin
Statin group	24.99	54.99	79.99
Control groups	123.99	25.99	149.99
Total	148.98	80.98	229.98

Table-II: Comparison of Statin Users and Control Groups According to Modified Rankin Scale Status (More or Less Than 4) at Discharge Time.

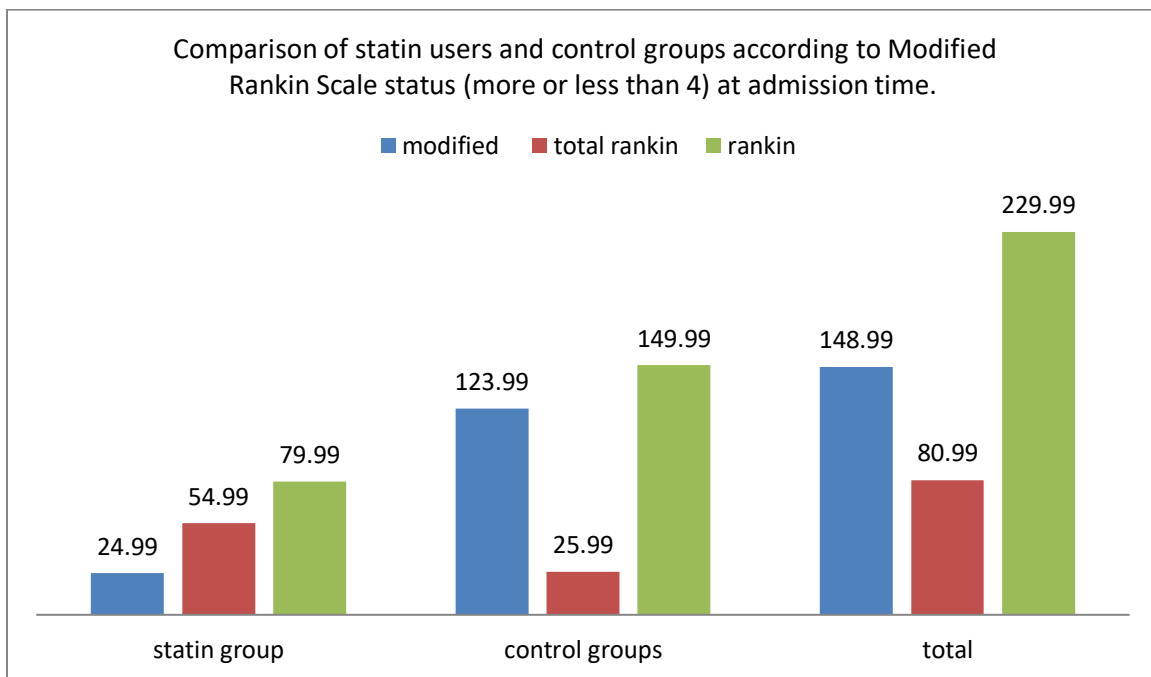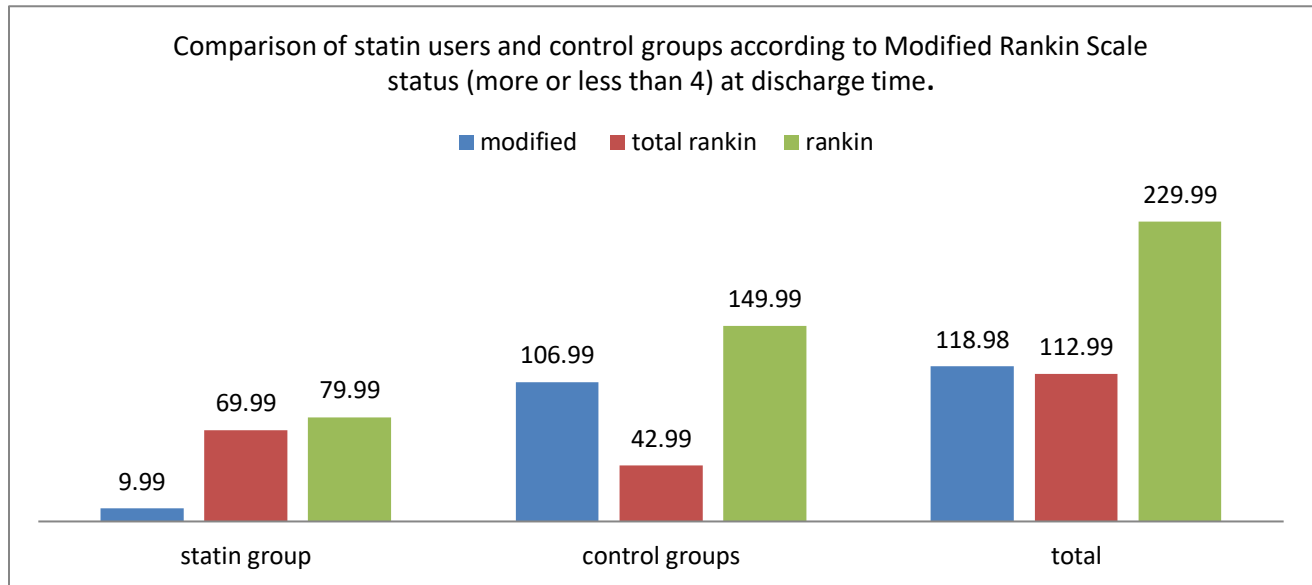| Modified Scale > 4	Modified Rankin Rankin Scale < 4	Rankin	Total
Statin group	9.99	69.99	79.99
Control group	106.99	42.99	149.99
Total	116.98	112.98	229.98

Comparison of statin users and control groups according to Modified Rankin Scale status (more or less than 4) at discharge time.

■ modified   ■ total rankin   ■ rankin

	statin group			control groups			total		
modified	9.99			106.99			118.98		
total rankin		69.99			42.99			112.99	
rankin			79.99			149.99			229.99

Several trials have confirmed that statins reduce the risk of stroke even in patients without elevated LDL or low High-Density Lipoprotein (HDL). [2-10] Modified Rankin Scale (MRS) is a commonly used clinical outcome measure for evaluation of motor disability of patients who had a stroke. The aim of study was to define the effect of statins on the short-term outcome of CIS.

METHODOLOGY:
All the patients of CIS admitted in the Allied Hospital Faisalabad, for analysis of stroke during the duration of Oct two thousand nine to Sep two thousand ten were listed in the research. Those patients who have all ready suffer from high blood pressure, Diabetes Mellitus, and Ischemic Heart Disease were removed from study. That patient who want to become the part of this research the written notices was taken from all patients. The confirmation of CIS was finding on the base of physical investigation of patients & notice of hypo dense area in brain CT scan. Case considered Patients were those who use the statins from past three months. Those patients who were not used any amount of statins were considered as controls. The age & sex of both case & control were matched.
Modified Rankin Scale (MRS) was used to measure motor ability the range of motor between zero and six. Zero scale indicates perfect health, four scale shows that patient suffers from severe disability, and

six scale indicate end of life. When MRS< 4 it was shows the Good condition of motor. MRS of all patients was related at admission with 220 mg/dl in male it was deliberated high cholesterolemia. Chi-square test was performed for the comparison of case and control group's patients. More ever these data were modified for hypercholesterolemia Mann-Whitney test used to reanalyze it. Comparison of mean of the continuous variables was performed using t test.

RESULTS:
All participant of this research work was two thirty (103 females, and 127 males) the average age of all patients up to 60-year-old. (2.7 ± 1.44) MRS was recorded in statins groups and (4.28 ± 0.88) was recorded in control group the value show deviation from each other, (P value < 0.001). The average MRS in statin patients (1.59 ± 1.58) was substantially change compared with control patients (4.09 ± 1.25) during the time of discharge, (P value < 0.001). The significant change was noted among statin users & control group patients with respect to MRS position (MRS<4> MRS) during hospital stay and at discharge time (All P values greater than 0.001) which shown in the above Table-1 & II. There was significant difference in short term prognosis between statin users and control groups (P value < 0.001) that is shown in Table-III.

Table-III: Comparison of Short Term Prognosis Between Statin Users and Control Groups

Good	Poor	Total prognosis	Prognosis
Statin group	66.99	12,99	79.99
Control group	42.99	106.99	149.99
Total	109.98	119.98	229.98

Comparison of short term prognosis between statin users and control groups.
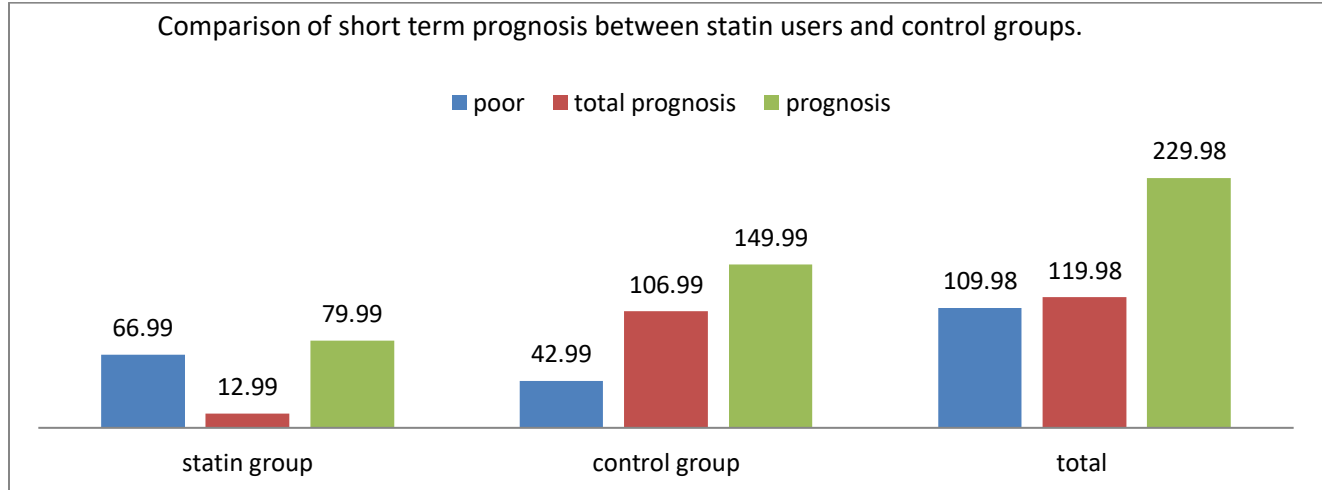
DISCUSSION:

In this research work two thirty participant were studded in all these patient 103 were female patients and 127 were male the average age of all patient was 60-year-old The significant change was noted among statin users & control group patients during hospital stay and at discharge time. If the motor condition remains unchanged or become worse than it show that result was poor. Fasting serum Cholesterol of patients was checked at during hospital stay. The values > 200 mg/dl in female to MRS position (MRS<4>MRS) during hospital stay and at discharge time (All P values < 0.001). There was significant difference in short term prognosis between statin users and control groups (P value < 0.001). Reeves MJ et al studded that Statins decrease the chance of stroke in patient those patent who take statins before a cerebral ischemic stroke (CIS) it improves the result of patients. After assess effect modification, before treatment with statins were joined with lower odds of poor results (OR=0.740, 95 percent CI 0.520, 1.020). A consequential relation was found among statin use & race. In whites, statins were related with numerically consequentially reduce odds of poor results (OR=0.610, 95 percent CI 0.420, 0.860), on the other hand in black's statins were related with a non-numerically consequential rise in poor result (OR=1.820, 95 percent CI 0.980, 3.390).

Compared tendency score investigation was stable with the assess effect model outcome. Pretreatment with statins was related with Good stroke result in whites, but they were not finding any evidence of a profitable effect of statins in blacks. They proposed more studies, as well as confused trials, to investigate different issue of statins on CIS result between whites & blacks. Joan Martí-Fabregas et al investigated that Statins may be helpful for those patients who have acute ischemic stroke. They believed that participant before treated with statins at the access of stroke have less serious neurological effects & a Good result. They investigate one sixty-seven patients (average age up to 71±11.9 years, ninety-six male). During admission time it investigate 30 patients (17.99%) were taking statins. Result at three months were more recurrent in the statin patients (79.99% versus 61.30%, P=0.0590 with the MRS; 77.0% versus 52.0%, P=0.0150 with the BI). Those patients who were using Statins before the access of cerebral ischemia may maintain benefits for the long-term functional result. Anyhow, confused controlled trials will be needed to calculate the strength of our outcome. Lalouschek W et al proposed that Statins decrease the chance of myocardial infarct and stroke in participant with vascular disease.

CONCLUSION:

those patients who taking statins in the initial stage of CIS show better result as compared to those patient who had never taken its. It seems sensible to advised statin to decrease motor inability and minimized the risk of CIS in patients.

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