Adherence to prescription of evidence based medications in patients with Ischemic Heart Disease (IHD) in Sudan

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Abstract:

IHD is associated with significant mortality and morbidity worldwide. International guidelines are established to recommend evidence based medications in this subset of patients. Adherence to evidence based medications reduce mortality and morbidity at both primary and secondary prevention level. There are global and inter-regional variations in the rate of adherence to these medications. The rate of adherence of physicians in Sudan to evidence based medications is largely unknown

The Study:

We conducted a retrospective study in Sudan Heart Institute(SHI), one of the leading cardiac centers in Sudan, on all patients with the diagnosis of IHD.We investigated the rate of adherence of Physicians to the prescription of evidence based medications at both the primary and secondary level.

Results:

150 patients were included. 60% were males and 40% were females. Mean age of patients was 58 years.

Upon admission 97% of patients were prescribed asprin, 86% beta-blocker, 96% clopidogrel, 95% a statin and 80% were prescribed an ACEI. There rate of prescription of these medications upon follow up was high and was not significantly lower than at admission.

Conclusion:

Physicians' adherence to prescription of evidence based medicines in patients with IHD is high in Sudan, this should result in better patients' outcome.

Key Words:

Ischemic Heart Disease, evidence based medicine,

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Introduction:

IHD is a global health burden and associated with significant mortality and morbidity affecting both the developed as well as the developing world 1. All efforts should be maximized to reduce this high mortality and morbidity rate. There is growing evidence that the prescription of dual antiplatelt therapy, B-blockers, Statins and ACEI are associated with a significant reduction in mortality and morbidity due to IHD at the primary prevention level as well as the secondary prevention level.

The American College of cardiology, the European Society of cardiology as well as other similar international bodies recommend the usage of these medications with a high class of indication and high scientific evidence. In spite of these recommendations there are gaps in their application in daily practice in different regions of the world. Several studies have found regional and inter-regional variations in the rate of prescription of these medications in the management of patients with IHD even in Western countries due to various reasons (2-5).

IHD is quite prevalent in Sudan and is associated with poor patient outcome. The disease seems to affect relatively young patients of the community with major implications upon the economics of a developing country. All efforts should be exerted to reduce this high burden. The early and high rate of usage of evidence based medications both upon

admission and follow up should help reduce the burden of this major health challenge. The applications of evidence based medications of IHD patients in Sudan is largely unknown. This area should be investigated to assess the management of patients with IHD in the country.

Aim of the Study:

We sought to analyze the rate of adherence of physicians in Sudan in the prescription of recommended evidence based medications in the management of patients with IHD both acutely and long term at a tertiary cardiac facility.

The study was conducted in Sudan Heart Institute(IHD) one of the leading cardiac hospitals in Sudan. We assumed this should represent the practice in the whole country at a tertiary level.

Methodology:

We conducted a retrospective cross section study involving all patients with a final diagnosis of IHD. Patients files were retrieved and analyzed for demographic data, risk factors, and prescribed medications upon admission and at least 6 months follow up at the outpatient clinic.

The medications studied were b-blockers, asprin, clopidogrel, statins and ACEI. The rate of prescription of these medications were studied. We did not investigate the reasons for failure to prescribe these recommended medications due to the retrospective nature of the study and the anticipated difficulty in obtaining such information. Patients' compliance to prescribed medications was not investigated as well as well as the rate of prescription in males compared to females. We sought there would be several factors for this variability which we expect to be difficult to quantify. These factors may include complex financial and social reasons.

Results and Discussion:

Total of 150 patients were studied. The percentage of males as compared to females was 60% and 40% respectively. All spectrum of IHD presentations were included with 42%% patients with a diagnosis of unstable angina, 32% with Non ST elevation myocardial infarction, 26% St elevation myocardial infarction , Risk factors distribution of patients is shown in table 1 and is consistent with the findings of previously published data 6-7.

Gender	Males	60%
	Females	40%
Risk factors		
	DM	54%
	HPTN	57%
	Family History	30%
	Smoking	40%
	hyperlipedemia	64%
Diagnosis		
	Unstable angina	42%
	Non STEMI	32%
	STEMI	26%

Table 1: Patients Characteristics

The rate of usage of evidence based medications is shown in Fig 1 and Fig 2. The rate of prescription was found to be high both upon admission and discharge with no significant difference at follow up in most drugs (Fig 3). As expected the prescription of Asprin was found to be the highest (97 % on admission)and this is probable due to its cheap price and proven

benefit. Though prescription of statin was very high on admission but at follow up was lower and this is probably due to its high market price. Probably the difference in rate of the prescription of ACEI upon admission and discharge is related to its hypotensive side effects upon others. The rate of prescription of Clopidpgrel is high both upon admission this rate remained high at 6 month follow up regardless of the final diagnosis. It is likely that this remains the same up to 1 year. Compliance of patients was not checked and we are not sure if patients were persistently taking the medicine for all this period taking into consideration its high cost.

It is quite evident from the results of this small study that evidence based medications are prescribed at a high rate compared to developed countries. This reflects the awareness of physicians and their strict adherence to international guidelines. We would hope this should materialize in reducing the mortality and morbidity of targeted patients. Further larger studies should be conducted to verify these results and areas such as patients compliance, brands of medications used and clinical outcome should be investigated along with it to test its effect on the long term prognosis of affected patients.

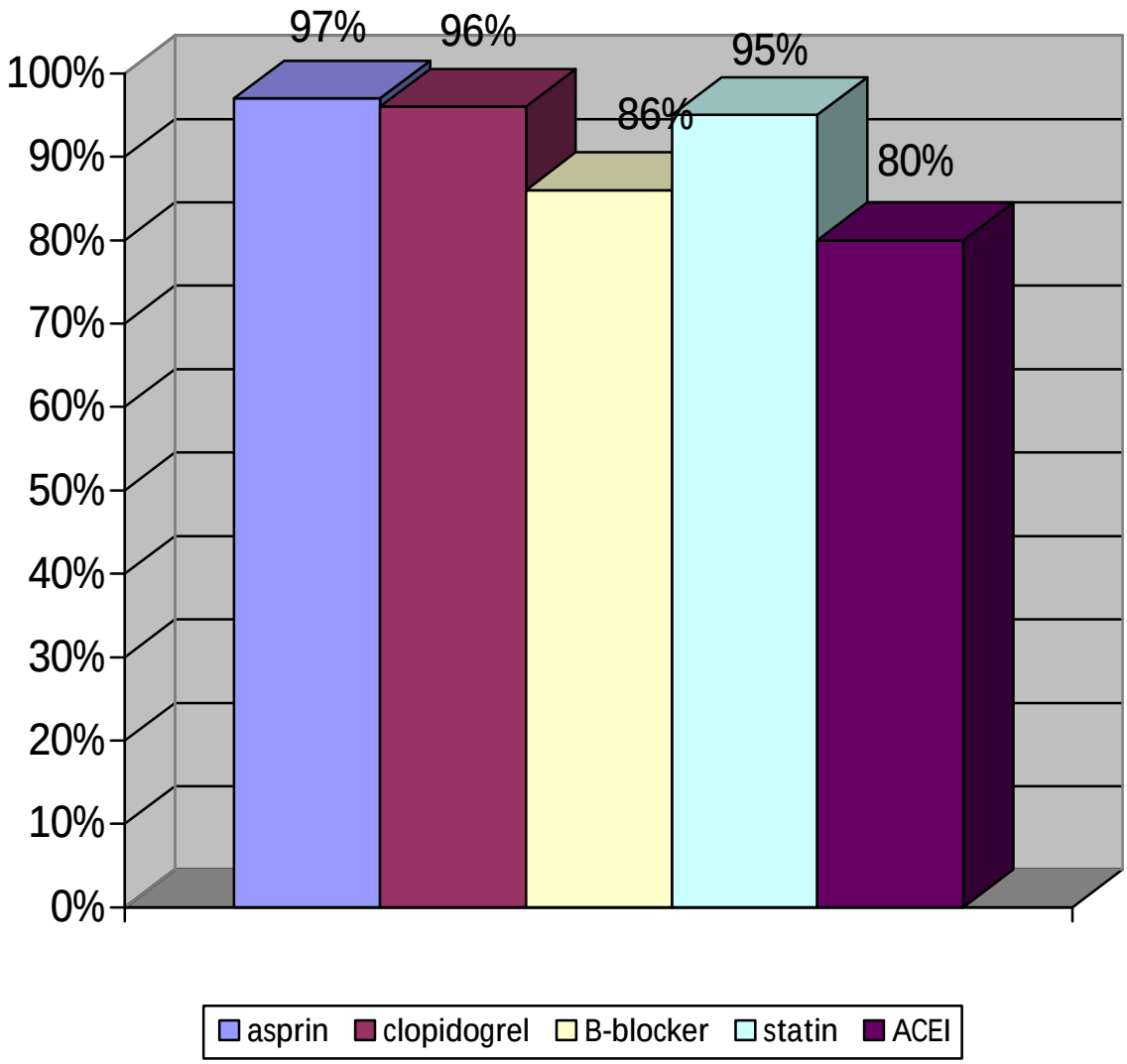

Fig 1: Prescription rate at admission

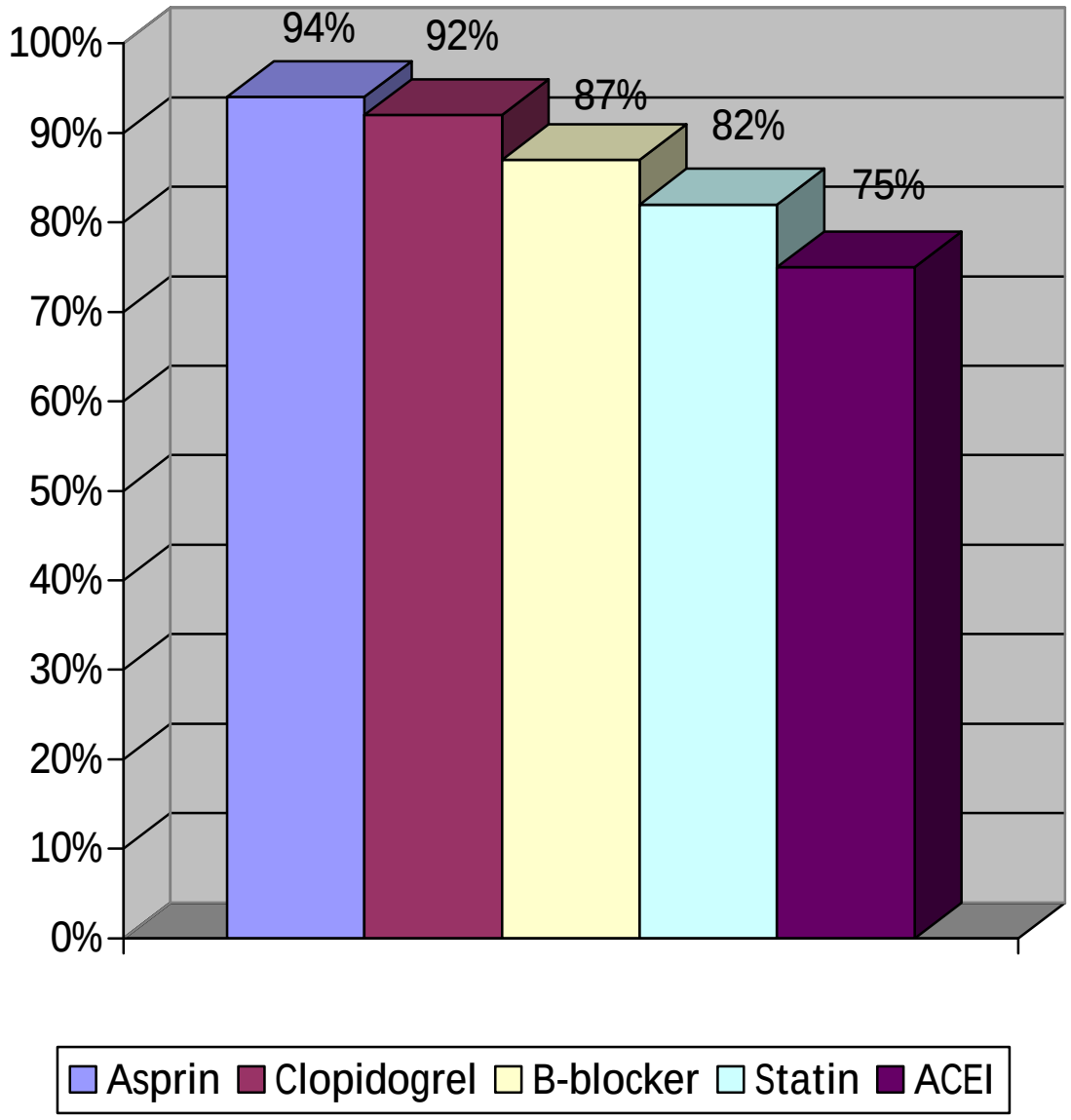

Fig 2: Prescription rate at 6 months follow up

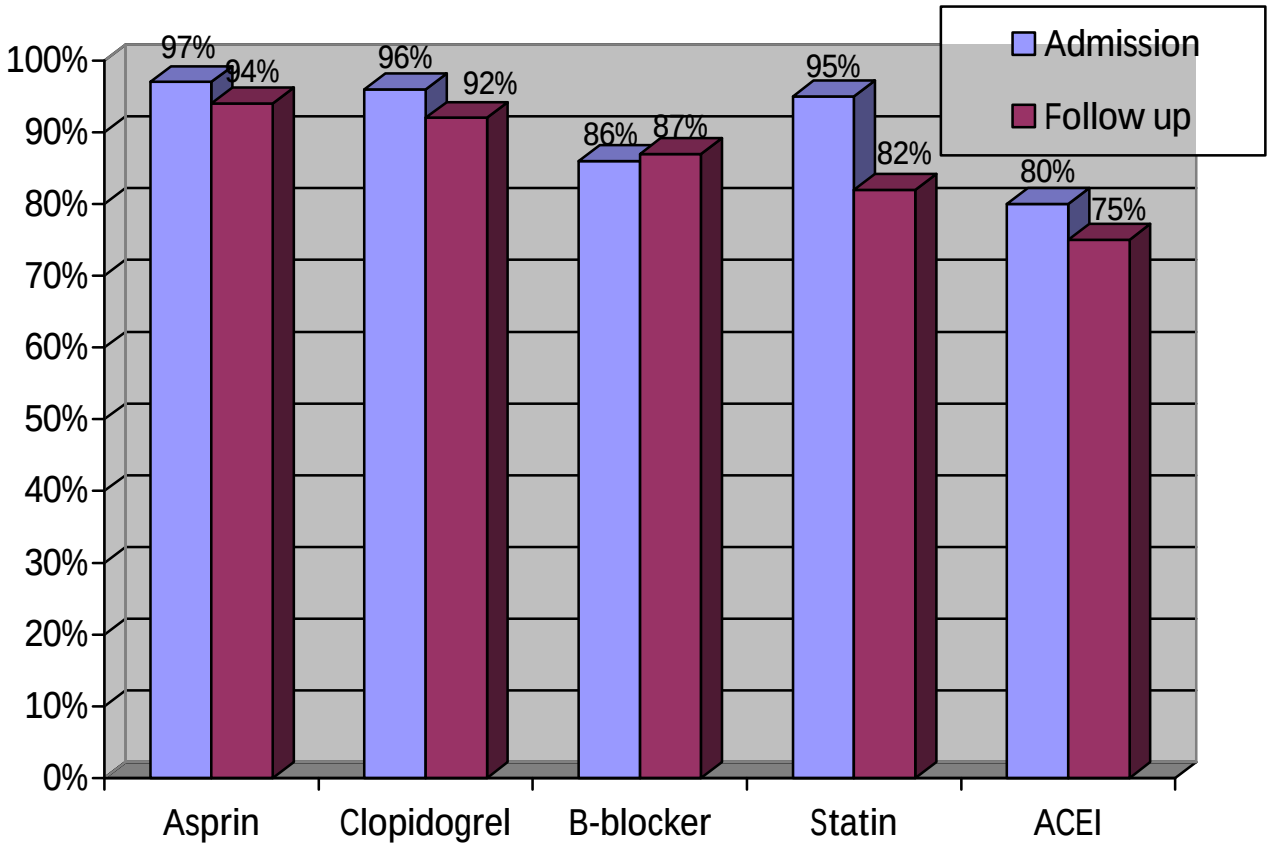

Fig 3: Prescription rate at admission compared to rate at Follow up

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