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# Aspirin in Primary Prevention of Myocardial Infarction/Angina and Stroke in Hypertensive Patients

Sir,

Hypertension is the leading attributable risk factor for mortality in the global burden of cardiovascular diseases (CVD).<sup>1</sup> Role of aspirin has been under debate in the past decade. In contrast, in a recent systematic review published in 2015 on 103,787 patients, reported risk of major gastrointestinal bleeding was increased and risk of hemorrhagic stroke or other intracranial bleeding tended to be increased in primary prevention trials in patients on aspirin.<sup>2</sup>

In many large trials which were conducted, the use of aspirin and cardiovascular outcomes on South-Asian population was not represented although they are relatively at higher risk of CVD.<sup>3</sup> Hence, aspirin use for prevention of CVD may have different results (both beneficial and adverse outcomes). So, the objective of this study is to determine the impact of aspirin use on cardiovascular disease including myocardial infarction (MI/angina and stroke) in hypertensive patients.

We did a cross-sectional study conducted in the Department of Medicine, The Aga Khan University Hospital, Karachi, Pakistan over a 3-year period from 2010 to 2012. Ethical clearance was taken from the Ethics Review Committee of The Aga Khan University (2827-Med-ERC-13). All participants aged greater than 40 years with history of hypertension, admitted through emergency room with MI/angina or stroke, were recruited. History of using aspirin was recorded. Hypertension was defined as SBP >140 mm Hg and DBP >90 mm Hg.<sup>4</sup> Use of aspirin defined as using a minimum dose of 75-81 mg of aspirin for minimum 4 weeks prior to ER visit was recorded.

A total of 575 patients were included in the study. Mean age was 63.96 ± 11.67 years, of which 372 (64.7%) were males and 203 (35%) were females. Aspirin use was present in 330 (57.4%) patients. Out of the 343 (59.7%) who had MI/angina, 208/343 (60.6%) were on aspirin for upto one month prior to the ER visit. Out of the 193 (33.6%) stroke patients, 99/193 (51.3%) were on aspirin. Upper gastrointestinal bleeding occurred in 49 (8%) patients and 26 (4.5%) were on aspirin. The OR of use

of aspirin with myocardial infarction/angina and stroke is reported in Table I.

Use of aspirin did not show a clear benefit in primary prevention for ischemic heart diseases (IHD) and stroke in this hypertensive patient population. This concept has remained a topic of debate in the last decade. As use of aspirin in secondary prevention of IHD and stroke is well established in the high-risk prevalent atherosclerotic cardiovascular diseases including IHD and stroke, aspirin decreases acute CVD event (approximately 20% reduction in coronary events and total stroke).<sup>5</sup> This study demonstrated that there is no clear role of aspirin in primary prevention of IHD or stroke in hypertensive patients. Hence, we conclude that aspirin has no clear role in primary prevention of IHD or stroke in hypertensive patients; and this effect is irrespective of age and gender. However, more studies are required to further confirm this conclusion as this study has limited external validity.

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**Table I:** Association of aspirin use with ischemic heart disease and stroke adjusted for covariates.

Aspirin used N (%)	Crude OR 95% CI	p-value	Adjusted model * OR 95% CI	p-value	Adjusted Model** OR 95% CI	p-value
208 (60.6)			<b>Ischemic heart disease (N=343)</b>			
	0.76 (0.5,1.0)	0.06	0.72 (0.5,1.0)	0.06	0.8 (0.51,1.2)	0.3
99 (51.3)			<b>Stroke (N=193)</b>			
	0.69 (0.49,0.9)	0.04	0.7 (0.49,1.0)	0.7	0.7 (0.5,1.1)	0.2

\*Adjusted for age and gender \*\*Adjusted for prior history of myocardial infarction, stroke, diabetes, dyslipidemia and chronic kidney disease.

