

Effect of an Indigenous Herbal Compound Abana on Fibrinolysis and Platelet Aggregation

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ABSTRACT

The administration of four tablets of Abana enhanced fibrinolytic activity in patients of acute myocardial infarction (Group I=10) and healthy individuals (Group II=10). However, the effect was statistically not significant. Long-term administration of Abana resulted in statistically significant ($p<0.01$) increase in fibrinolytic activity (FA) and decrease in platelet aggregation (PAg) in healthy adults but not in coronary artery disease (CAD) patients. In view of its beneficial effect on fibrinolysis and platelet aggregation, without any untoward effects, Abana may prove to be a useful adjunct in the long-term management of individuals predisposed to coronary artery disease.

INTRODUCTION

Abana is a remedy which contains many herbal compounds¹ commonly used by traditional medical practitioners in the management of cardiovascular disorders. The hypolipidaemic², antiatherosclerotic³ and blood pressure lowering effects^{4,5} have been reported earlier. It has also been published that Abana has a beneficial effect in patients of CAD⁶. Further, it has been found that the herbal compound drug has effects similar to propranolol through a different action, i.e. beta-receptor down-regulation⁷. The present study has been conducted to evaluate its effect fibrinolytic activity (FA) and platelet aggregation (PAg) in healthy individuals and patients of coronary artery disease (CAD).

MATERIAL AND METHODS

The effect of Abana was evaluated after its acute and long-term administration in healthy individuals and patients of CAD.

1. *Acute effects:* The study was conducted on 10 healthy individuals (mean age 42 years) and 10 patients (mean age 50 years) of acute myocardial infarction (less than 7 days old). All were non-smokers and of average build.

Abana was administered in a single dose of 4 tablets to each subject. The blood samples were collected in the morning in a fasting condition and four hours after the drug administration.

2. *Long-term effects:* Ten healthy individuals (mean age 42 years) and 10 patients (mean age 55 years) of CAD were selected for the study of long-term (3 months) administration of Abana. Patients having a history of myocardial infarction were included. All the cases were stabilised and had no recent history of severe angina or infarction. The last episode of infarction occurred more than 6 months back. All were males, non-smokers. None of them was given any therapy except isosorbide dinitrate or diazepam. All were ambulatory and were instructed to make no significant alteration in their normal dietary or walking schedules throughout the study period. They were administered Abana or placebo in the following manner:

First two weeks - Placebo 2 x 2
 Third to sixth week - Abana 2 x 2
 Seventh to tenth week - Abana 2 x 2 x 2
 Last two weeks - Placebo 2 x 2 x 2

The blood samples were collected initially and after the second, sixth, tenth and twelfth weeks. All samples were collected in the morning in a fasting condition about 12 hours after the last dose of the drug. Care was taken not to apply any undue pressure or tourniquet on the veins.

Samples were analysed for fibrinolytic activity (FA)⁵ and platelet aggregation (PAg)⁶.

RESULTS

The short-term administration of 4 tablets of Abana enhanced FA in healthy individuals. However, the effect was statistically insignificant (Table 1). No effect was observed on PAg in both the groups.

Table 1: Acute effect of a single dose (4 tablets) of Abana on fibrinolytic activity (FA) and platelet aggregation (PAg):

Mean ± SE				
	Healthy subjects		Acute M.I. patients	
	F.A. (Units)	PAg (%)	F.A. (Units)	PAg (%)
Initial	71.00 ± 4.31	84.00 ± 2.09	53.48 ± 5.81	88.20 ± 2.41
After 4 hours	78.44 ± 4.56	80.40 ± 1.85	58.92 ± 6.12	87.40 ± 2.77
<i>p</i> value	NS	NS	NS	NS

On long-term administration of Abana, FA was significantly ($p < 0.01$) enhanced in healthy individuals and PAg was also reduced significantly. In patients of CAD, Abana also increased FA and decreased PAg, but the effect was statistically not significant (Table 2).

Table 2: Effect of long-term administration of Abana on fibrinolytic activity (FA) and platelet aggregation (PAg) in healthy individuals and in patients of CAD

	Initial	2 nd week	6 th week	10 th week	12 th week
Healthy Adults					
FA (Units)	63.25 ± 3.81	66.22 ± 2.93	69.28 ± 2.93	71.32 ± 3.53	68.42 ± 3.40
<i>p</i> value		NS	<0.01	<0.01	NS
CAD Patients					
FA (Units)	56.06 ± 3.52	57.28 ± 3.74	63.80 ± 3.20	63.71 ± 3.31	57.74 ± 2.54
<i>p</i> value		NS	NS	NS	NS
PAg (%)	84.20 ± 2.34	83.20 ± 2.30	79.70 ± 1.51	79.20 ± 1.43	80.90 ± 1.67
<i>p</i> value		NS	NS	NS	NS

DISCUSSION

In the recent past, several attempts have been made to evaluate the clinical significance of many herbal preparations, especially in the prevention and management of CAD. Abana has also been evaluated for its effect on blood lipids², blood pressure⁴, heart rate¹⁰ and symptoms of neurocirculatory disorders¹¹. The present study further adds to its multifold action.

In the acute experiments, Abana was found to be ineffective both in healthy adults and in patients of CAD. However, during long-term study, beneficial effects of FA and PAg were observed at the end of the first month of drug administration. The significant effect was observed in healthy adults only, although a slight increase in FA and decrease in PAg were also seen in patients of CAD ($P = NS$). The delayed effect of Abana may be explained on the basis that the drug may be taking some weeks to build up its effect, which may be commonly seen in the case of most herbal drugs. It was surprising to note that Abana was only effective in healthy adults while no significant effect was seen in CAD patients. This may be explained on the basis that in CAD patients there may be multiple

factors influencing the blood coagulability and there would be abnormalities of lipid levels. These may not be directly influenced by Abana in a short period and may require further prolonged administration. Secondly, perhaps a larger dose of the drug may be required in these patients of CAD for producing significant effects.

The significance of fibrinolysis and PAg has been stressed from time to time¹². Gupta *et al.*¹³ studied the fibrinolytic activity and platelet adhesiveness in 150 patients of IHD. They observed increased platelet adhesiveness and decreased FA in patients of IHD significantly. It is also documented that in 90 per cent of acute myocardial infarction there is thrombus formation. The thrombus formation was documented on the basis of coronary angiography performed during the evolving period of myocardial infarction¹⁴. In view of these findings, Abana may be useful in the management of patients predisposed to CAD, particularly in the light of its beneficial effect on FA and PAg.

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