

## **Efficacy of Terminalia arjuna in chronic stable angina: a double-blind, placebo-controlled, crossover study comparing Terminalia arjuna with isosorbide mononitrate.**

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### **Source**

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### **Abstract**

#### **BACKGROUND:**

Terminalia arjuna, an Indian medicinal plant, has been reported to have beneficial effects in patients with ischemic heart disease in a number of small, open studies. The need for a double-blind, randomized, placebo-controlled study with adequate sample size has long been felt. The bark extract (IPC-53) contains acids (arjunic acid, terminic acid), glycosides (arjunetin arjunosides I-IV), strong antioxidants (flavones, tannins, oligomeric proanthocyanidins), minerals. etc. and exhibits antifailure and anti-ischemic properties.

#### **METHODS AND RESULTS:**

Fifty-eight males with chronic stable angina (NYHA class II-III) with evidence of provokable ischemia on treadmill exercise test received Terminalia arjuna (500 mg 8 hourly), isosorbide mononitrate (40 mg/daily) or a matching placebo for one week each, separated by a wash-out period of at least three days in a randomized, double-blind, crossover design. They underwent clinical, biochemical and treadmill exercise evaluation at the end of each therapy which were compared during the three therapy periods. Terminalia arjuna therapy was associated with significant decrease in the frequency of angina and need for isosorbide dinitrate (5.69±6.91 mg/week v. 18.22±9.29 mg/week during placebo therapy,  $p<0.005$ ). The treadmill exercise test parameters improved significantly during therapy with Terminalia arjuna compared to those with placebo. The total duration of exercise increased (6.14±2.51 min v. 4.76±2.38 min,  $p<0.005$ ), maximal ST depression during the longest equivalent stages of submaximal exercise decreased (1.41±0.55 mm v. 2.21±0.56 mm,  $p<0.005$ ), time to recovery decreased (6.49±2.37 min v. 9.27±3.39 min,  $p<0.005$ ) and higher double products were achieved (25.75±4.81×10<sup>3</sup> v. 23.11±4.83×10<sup>3</sup>,  $p<0.005$ ) during Terminalia arjuna therapy. Similar improvements in clinical and treadmill exercise test parameters were observed with isosorbide mononitrate compared to placebo therapy. No significant differences were observed in clinical or treadmill exercise test parameters when Terminalia arjuna and isosorbide mononitrate therapies were compared. No significant untoward effects were reported during Terminalia arjuna therapy.

#### **CONCLUSIONS:**

Terminalia arjuna bark extract, 500 mg 8 hourly, given to patients with stable angina with provokable ischemia on treadmill exercise, led to improvement in clinical and treadmill exercise parameters as compared to placebo therapy. These benefits were similar to those observed with isosorbide mononitrate (40 mg/day) therapy and the extract was well tolerated. Limitations of this study include applicability of the results to only men with chronic stable angina but not necessarily to women, as they were not studied.

### **Comment in**

- [Efficacy of Terminalia arjuna in chronic stable angina.](#) [Indian Heart J. 2002]