

ONCE DAILY 50 MG ATENOLOL IN THE TREATMENT OF MILD AND MODERATE HYPERTENSION

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SYNOPSIS

The hypotensive effect of 50 mg Atenolol given once daily was assessed in 15 patients with mild and moderate hypertension. In 8 patients the hypotensive effect of 50 mg and 100 mg Atenolol was compared. Significant falls in blood pressure were achieved.

INTRODUCTION

In the last one decade in Singapore, the beta blockers have become one of the most important as well as one of the most popular pharmacological agents in the treatment of hypertension. Atenolol ("Tenormin") a cardioselective beta blocker with a half life of 6-9 hours has been shown by many studies all over the world to be an effective anti-hypertensive agent which can be given once a day^(1,2). The conventional dosage of Atenolol for the treatment of hypertension has been 100 mg. However, several recent studies in UK, USA and Australia have indicated that 50 mg of Atenolol may be sufficient for lowering blood pressure (BP) in hypertensive patients (3).

MATERIALS AND METHODS

Fifteen patients with mild to moderate hypertension (diastolic blood pressure ranging from 98 mmHg to 116 mmHg) were studied. There were 13 male and 2 female and 10 Chinese, 3 Malay and 2 Indian patients. Their ages ranged from 45 to 62 years (mean 52 years). Their chest X'ray, ECG, serum urea, electrolytes and sugar and their urine analysis were all normal. All the 15 patients were considered to be suffering from essential hypertension.

All patients were given identically matched placebo tablets (one tablet a day) over a 2 week period. Following this, 50 mg of Atenolol given once a day in the morning was started. The patients were assessed in the outpatient clinic at every 2 weekly interval. On the morning of the clinic visit Atenolol was omitted. At every visit

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the BP was measured (after a 15 minute rest period) together with an ECG rhythm strip recorded in both the supine as well as the erect position. At each visit a check list of side effects was enquired. Assessment of the hypotensive effect of 50 mg Atenolol was done 6 weeks after therapy was begun.

In 8 patients, 100mg Atenolol was substituted after the 6th week and continued for another 6 weeks after which the effect of this drug was assessed. All results were analysed using student's paired "T" test.

RESULTS

All blood pressure readings in mmHg \pm SD.
 Assessment of 50 mg mg Atenolol (N = 15).
 Placebo: Supine 159.1 \pm 7.4/102.3 \pm 6.3.
 Erect 157.4 \pm 6.9/104.7 \pm 6.5.
 Atenolol 50 mg: Supine 136.5 \pm 7.7/83.4 \pm 5.1 ($p < 0.001$).
 Erect 136.4 \pm 7.0/87.5 \pm 4.5 ($p < 0.001$).
 Assessment of 50 mg vs 100 mg Atenolol (N = 8).
 Placebo: Supine 157.8 \pm 7.3/102 \pm 3.1
 Erect 157.2 \pm 7.1/103.6 \pm 4.2.
 Atenolol 50 mg: Supine 140.0 \pm 4.5/83.8 \pm 2.3 ($p < 0.001$).
 Erect 142.0 \pm 4.4/85.2 \pm 2.1 ($p < 0.001$).
 Atenolol 100 mg: Supine 140.0 \pm 6.2/84.1 \pm 2.6 ($p < 0.001$).
 Erect 140.2 \pm 4.6/86.1 \pm (p < 0.001).

The p value of results obtained between 50 mg and 100 mg Atenolol was not significant. Figures 1 and 2 show the data in a graphic form. Supine Heart Rate (calculated from ECG rhythm strip). Placebo: 82.7 \pm 10.3. Atenolol 50 mg: 63.3 \pm 4.3 ($p < 0.001$). No significant side effects were encountered during the trial.

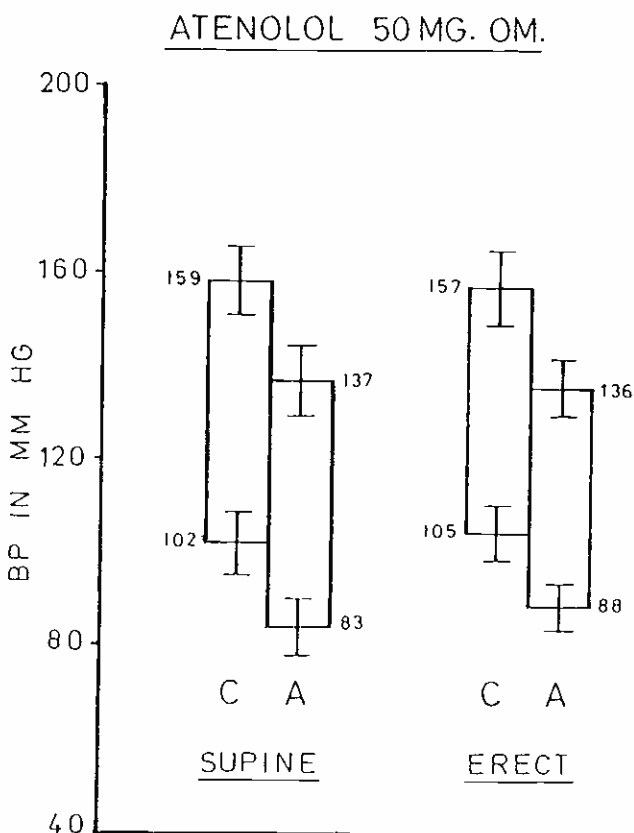
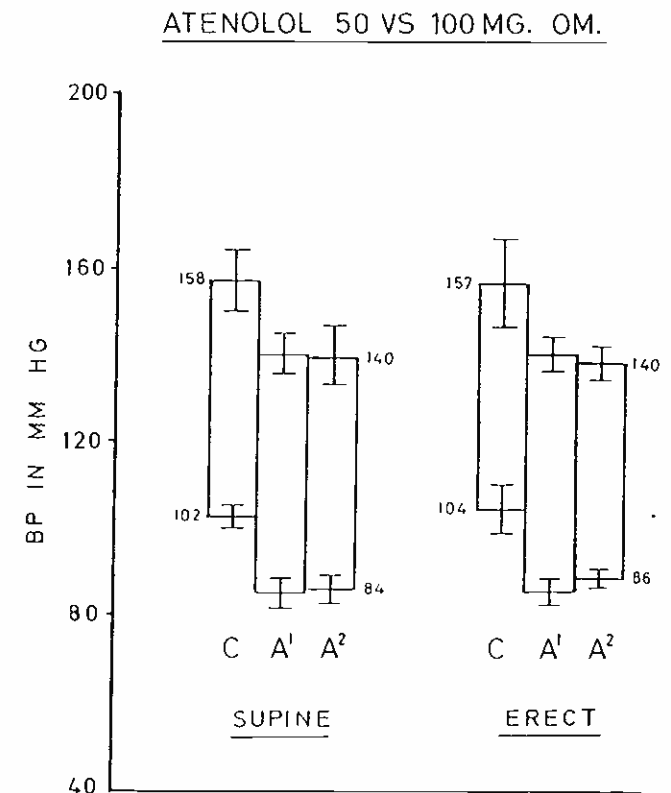


Fig. 1 Chart showing the hypotensive effect of 50 mg Atenolol BP = blood pressure OM = once daily in the morning C = placebo A = 50 mg Atenolol.

Fig. 2 Chart showing the hypotensive effect of 50 mg and 100 mg Atenolol. Abbreviations as in figure 1. A1 = 50 mg Atenolol A2 = 100 mg Atenolol.



DISCUSSION

Atenolol, at a dosage of 100 mg and administered once a day has been shown by many studies to be an effective agent in the treatment of hypertension(1,2). Several recent studies have suggested that 50 mg of Atenolol given once a day may be equally effective and may be adequate in lowering blood pressure in the majority of patients with mild and moderate hypertension(3).

This study confirms the findings reported elsewhere that 50 mg Atenolol given once daily is indeed sufficient for the treatment of mild and moderate hypertension. In the 15 patients whom we studied, there was a significant fall in both the systolic as well as the diastolic blood pressures in the supine as well as the erect positions with 50 mg Atenolol. In 8 patients the hypotensive effect of 50 mg and 100 mg Atenolol was compared and was found to be similar.

In conclusion, we have confirmed that 50 mg of Atenolol given once daily is effective in the treatment of mild and moderate hypertension. The value of beginning with 50 mg instead of 100 mg of Atenolol will result in economic saving as well as possible decrease in side effects. The need to give Atenolol once a day will result in better compliance of hypertensive patients.

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