

ACEBUTOLOL IN HYPERTENSION*

By

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Hypertension is a common condition, its incidence being 15 percent among white adults and 25 to 30 among black adults in U.S.A. In Pakistan, the incidence of hypertension is 15 to 20 percent in adults.

It is a major risk factor in the causation of coronary and cerebral atherosclerotic heart disease apart from its potential for mechanical and ischaemic damage to the heart, brain, retina and kidney. The Veterans Administration Co-operative Study Group on Hypertensive Agents (1967, 1970) reported a salutary effect of blood pressure reduction on morbidity and mortality in hypertensive patients with diastolic blood pressure over 105 mm Hg.

Acebutolol is a new beta receptor blocking drug with a relatively selective action on beta receptors, a mild intrinsic sympathomimetic activity and a membrane stabilising effect. It, therefore belongs, to Division II, Group I of Prichard classification.

Trials of Acebutolol in hypertension have already been reported (Ashton, 1976; Chatterji, 1978; Hua et al, 1980; Wheatley, 1976).

Methods and Material:

Twelve patients suffering from mild to moderate hypertension were treated with acebutolol. *Mild* hypertension was defined as diastolic blood pressure between 96 to 110 mm Hg. and *moderate* hypertension as diastolic blood pressure between 111 to 125 mm Hg. Patients with a history of bronchial asthma, bradycardia congestive heart failure, renal disease and diabetes mellitus were excluded from the trial. No patient

showed any evidence of target organ involvement. The base line biochemical parameters such as urinalysis, complete blood count, blood urea, serum creatinine, serum cholesterol, serum triglycerides, and blood glucose, both fasting and two hours after breakfast were obtained before and at the end of treatment and were within normal limits. All patients presented with nonspecific symptoms such as fatigue, tiredness, vague feeling of heaviness of head, irritability and insomnia. None was aware of the presence of elevated blood pressure and they were told about their raised blood pressure only at the end of the trial.

Blood pressure before the beginning of trial was recorded in the supine position. Sudden *muffling* of Korotkov sounds (Phase IV) was taken as the diastolic blood pressure. Systolic blood pressure was recorded at the first appearance of Korotkov sounds. The patients were seen every two weeks and were examined physically. Their blood pressure was recorded both in the supine and erect position and their pulse rate was recorded. Each patient was specifically asked about any symptoms or complaints at each visit. Control of blood pressure was recorded *good satisfactory* if fall of mean blood pressure 20 to 24 mm Hg. Blood pressure control was graded *poor* if fall of mean blood pressure was less than 19 mm. Hg. Mean blood pressure was derived from the equation:

$$\text{Mean blood pressure} = \text{diastolic blood pressure} + \frac{1}{3} \text{ pulse pressure.}$$

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*Based on a paper read at the Fifth All Pakistan Congress of Cardiology at Lahore in 1981.

Results:

The results have been summarised in

Table I. The age of patients ranged from 17 to 66 years, the average being 43.6 years (Table 2).

Table I

S. No	Age (Yrs.)	Sex	Blood pressure mm. Hg.			Pulse beats/min.		Dose mg.	Side-effects
			Before	After		Before	After		
				Sub.	Erect.				
1.	55	M	$\frac{170}{110}$	$\frac{120}{80}$	$\frac{120}{82}$	86	72	600 mg	Headache, dizziness heartburn.
2.	58	M	$\frac{180}{110}$	$\frac{130}{80}$	$\frac{132}{84}$	80	70	600 mg	Diarrhoea.
3.	50	M	$\frac{170}{110}$	$\frac{130}{90}$	$\frac{130}{88}$	82	66	600 mg	Insomnia, mild headache.
4.	42	M	$\frac{170}{110}$	$\frac{120}{80}$	$\frac{124}{80}$	76	70	600 mg	
5.	35	F	$\frac{180}{110}$	$\frac{130}{90}$	$\frac{130}{90}$	76	68	600 mg	Tiredness.
6.	42	M	$\frac{170}{110}$	$\frac{140}{90}$	$\frac{140}{92}$	78	70	400 mg	
7.	66	M	$\frac{190}{105}$	$\frac{150}{80}$	$\frac{140}{80}$	74	72	400 mg	
8.	49	M	$\frac{150}{115}$	$\frac{130}{90}$	$\frac{130}{92}$	72	66	600 mg	Loose stools.
9.	17	M	$\frac{170}{120}$	$\frac{110}{80}$	$\frac{115}{80}$	80	66	800 mg	Headache.
10.	42	M	$\frac{190}{120}$	$\frac{130}{90}$	$\frac{130}{90}$	84	70	600 mg	
11.	18	M	$\frac{170}{100}$	$\frac{120}{80}$	$\frac{112}{80}$	82	66	600 mg	
12.	50	M	$\frac{150}{120}$	$\frac{110}{90}$	$\frac{115}{90}$	83	68	600 mg	

Table II: Age Distribution

<i>Age in Years</i>	<i>Number</i>
11 to 20	2
21 to 30	0
31 to 40	1
41 to 50	6
51 to 60	2
61 to 70	1
Total	12

Table III

<i>Males</i>	<i>Females</i>
11	1
Total	12

Table IV: Average Blood Pressure mm. Hg.

<i>Before Treatment</i>		<i>After Treatment</i>	
<i>Systolic</i>	<i>Diastolic</i>	<i>Systolic</i>	<i>Diastolic</i>
172	112	128	86

Table V: Reduction in Blood Pressure mm. Hg.

<i>Systolic</i>	<i>Diastolic</i>
44	26

Table VI: Control of Mean Arterial B.P.

Good	10
Satisfactory	2

Table VII: Average Pulse Rate Beat per minute

<i>Before Treatment</i>	<i>After Treatment</i>
79	68

Average Reduction in Pulse Rate 11 beats/minute.

Table VIII: Side—Effects

Headache	3
Dizziness	1
Insomnia	1
Heartburn	1
Diarrhoea	2
Tiredness	1

There were 2 patients in the age group 11 to 20 years, 1 patient between 31 to 40 years, 6 patients between 41 to 50 years, 2 patients between 51 to 60 years and one patient between 61 to 70 years. There were 11 males and one female patient (Table III). Average systolic blood pressure before treatment was 172 mm. Hg. and at the end of the treatment was 128 mm. Hg. The average *diastolic* blood pressure before treatment was 112 mm. Hg. and at the end of treatment was 86 mm. Hg (Table IV). Average reduction in systolic blood pressure was 44 mm. Hg. and average reduction in diastolic blood pressure was 26 mm. Hg. (Table V). The average mean arterial pressure before treatment was 131.5 mm. Hg. and at the end of treatment was 100 mm. Hg. showing an average reduction of 31.5 mm. Hg. The response was good in 10 and satisfactory in 2 patients (Table VI). Average pulse rate before treatment was 79 beats per minutes and at the end of the treatment