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Title : POST-OP BP IN CLONIDINE OR METHYLDOPA-TREATED PATIENTS

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Introduction. Controversy still exists regarding 1) the impact of preoperative hypertension on intra-anesthetic and post-anesthetic morbidity, 2) the definition of optimum preoperative hypertension control and 3) the proper timing for preoperative anti-hypertensive medication discontinuation.[1,2] We sought to identify factors predisposing to postoperative hypertension in a group of hypertensive patients treated with oral clonidine® (Catapres®) or methyldopa (Aldomet®).

Methods. Available records of all hypertensive surgical patients treated with clonidine or methyldopa over a two year period at the Naval Regional Medical Center Oakland, CA, were retrospectively reviewed. Factors recorded for each patient included 1) preoperative systolic blood pressure, 2) peak systolic blood pressure in the immediate postoperative period, 3) time of the last dose of oral clonidine or methyldopa, 4) region and type of operative procedure. Blood pressures in all patients were obtained by ascultation. All patients received adequate analgesia during the immediate postoperative period. Postoperative hypertension was defined as systolic blood pressure 1) 30% higher than preoperative levels, 2) greater than 200 torr, 3) requiring intravenous anti-hypertensive medication for control, or 4) associated with cardiac arrhythmias or signs of myocardial ischemia. Statistical significance was determined by the chi-square test.[3]

Results. There were 71 patients treated with clonidine and 78 with methyldopa. For patients receiving either drug, those who were hypertensive postoperatively had higher preoperative systolic pressures than those who were normotensive preoperatively. (Tab.1)

Table 1. Preoperative Systolic Pressures (n)

	Postoperative Hypertension	Postoperative Normotension
Methyldopa	167.5 ± 38.2 (6)	136.3 ± 21.1(72)
Clonidine	159.9 ± 27.1 (15)	136.9 ± 23.4(56)

($\bar{X}$ ± SD) (All measurements in torr)

A preoperative systolic blood pressure greater than or equal to 180 torr was associated with a significantly higher incidence of postoperative hypertension for patients receiving either clonidine (Table 2) or methyldopa (Table 3).

Table 2. Patients Receiving Clonidine (n=71)

Pre-op Systolic BP	Postoperative Hypertensive	Postoperative Normotensive	Total
≥180 torr	5	5	10
<180 torr	10	51	61
Total	15	56	71

$X^2 = 3.99$, df = 1, $p < .05$

Table 3. Patients Receiving Methyldopa (n=78)

Pre-op Systolic BP	Postoperative Hypertensive	Postoperative Normotensive	Total
≥180 torr	3	4	7
<180 torr	3	68	71
Total	6	72	78

$X^2 = 7.7674$, df = 1, $p < .01$

Although not true for methyldopa, patients receiving clonidine who did not receive clonidine immediately preoperatively had significantly greater postoperative blood pressure than did patients who received clonidine immediately preoperatively together with other preoperative medications. (Table 4)

Table 4. Clonidine Treated Patients

Clonidine Immediately Preoperatively (n=57)		
Systolic BP	Pre-op	142.6 ± 21.98
	Post-op	150.0 ± 39.01
No Clonidine Immediately Pre-op (n=14)		
Systolic BP	Pre-op	142.5 ± 29.4
	Post-op	170.1 ± 39.54

($\bar{X}$ ± SD) (All measurements in torr)

Discussion. Postoperative hypertension relates to the degree of preoperative blood pressure control in chronically hypertensive patients treated with clonidine or methyldopa. Patients who have systolic blood pressure ≥ 180 torr on arrival to the operating room are more likely to develop troublesome postoperative hypertension than patients whose blood pressure is better controlled.[4] Our data corroborate that of other workers[4] in that chronically hypertensive patients treated with clonidine who arrive in the operating room under good control are more likely to develop severe hypertension in the immediate postoperative period if their clonidine dosage has been withheld immediately preoperatively. This study identifies several factors which are useful predictors of troublesome immediate postoperative hypertension in patients chronically treated with either clonidine or methyldopa.

References.

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