Renin-Aldosterone and Vanillylmandelic Acid in Postpartum Hypertension

Dear Sir:

It is well documented that a very small percentage of women developed transient hypertension 6 weeks after the termination of a normal pregnancy [1-4]. Since there is little knowledge about the mechanism of this type of hypertension, we studied plasma renin activity, plasma volume, and urinary excretion of vanillylmandelic acid and aldosterone in 5 postpartum hypertensive patients. Patients entered the study if they satisfied the following criteria: a normal pregnancy, normal blood pressure during and prior to pregnancy, sustained hypertension (diastolic pressure exceeded 90 mm Hg) during the 6-week of postpartum period, and not on any medication. During the hypertensive period the following laboratory examinations were performed: plasma renin activity (lying and upright position), plasma volume, and urinary excretion of aldosterone and vanillylmandelic acid.

Table I. Plasma volume, plasma renin activity, urine aldosterone and urine vanillylmandelic acid (VMA) excretion during postpartum hypertension

Patient	
Plasma	
Plasma	
renin	
Urine	
Urine	
volume	
activity,	
ng%	
aldo-	
VMA	
ml/kg	
lying	
upright	
sterone excretion	
µg/24 h	
excretion mg/24 h	
1. L.W.	
44.83	
430	
390	

3.1
 3.6
 2. B.W.
 40.98
 680
 380
 10.1
 3.2
 3. M.H.
 40.32
 < 100
 100
 4.5
 3.3
 4. F.E.
 44.80
 120
 190
 5.3
 2.0
 5. L.H.
 -
 490
 580
 -
 -
 - = Not done.

The results of these tests are shown in table I. All of these values, except plasma renin activity, were within normal limits. Plasma renin activity in lying and upright position was lower than normal in 2 of the 5 patients. Routine laboratory examinations, such as urine protein, blood urea nitrogen, serum creatinine, serum uric acid, and serum electrolytes were normal during the hypertensive period. From this preliminary result, we concluded that postpartum hypertension was neither associated with an increase of vanillylmandelic acid excretion nor related to the renin-aldosterone mechanism [5]. However, more patients are needed to identify the biochemical and physiological factors in postpartum hypertension. Also, a longer period for follow-up of these patients is necessary to determine whether postpartum hypertension may recur as essential hypertension.

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