Reviewer's report

Title: First-attack Pediatric Hypertensive Crises Presenting to the Pediatric Emergency Department

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Reviewer: Tomas T Seeman

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This manuscript describes retrospective chart review study single centre study on hypertensive crisis in children. The authors have found surprisingly that half of the children had essential hypertension. CNS symptoms were the most common symptomatology.

Major comments:

Patient population:

Exclusion criteria: What is “a medical condition incompatible with the definition of HT in children and adolescents of 2004” ?

28 patients with asymptomatic hypertension should NOT be included in the study (as it is an EXCLUSION criterion)

What does it mean “Severity was based on the primary diagnosis” ?

Staging of HT (stage 1 and 2) should be mentioned here in the text

BP measurements:

ABPM is mention in methods, however, no data on the results of ambulatory blood pressure monitoring are given in the Result section.

Why SYSTOLIC BP was not taken into account in the definition of hypertensive urgency?

How the end organ damages were specifically defined and detected ?

Were all the multiple tests to diagnose essential hypertension (to exclude secondary HT) been performed in ALL children during the stay in emergency dpt. ?

Results:

Give exact primary renal and endocrine diagnoses.

Give exact numbers of the patients (NOT saying “More than half” )

Give exact numbers of the patients (NOT saying “A positive family history was
present only in older patients”)

The authors say that “Clinical manifestations and severity had a correlation with age” but all but one characteristics did NOT correlate with age acc. the p-values in the Table 1.

Which exact underlying causes of HT had the eight children with “combined underlying causes” ?

Give percentages together with the absolute n-values.

BMI must be given in SDS values and NOT in absolute values as it changes with age (in text and in tables).

SBP and DBP must be given in SDS values or as BP index and NOT in absolute values as they change with age (in text and in tables).

Give exact numbers of antihypertensive drugs used, exact names of the drugs. Give exact numbers of BP during the hours or days of hospitalisation instead of saying “BP decreased slowly”.

Patients with hypertensive encephalopathy:
Give exact numbers of BP instead of saying “both much higher BP”.

How fast the coma recovered?

How was the BP during recovery?

Give exact primary oncologic diseases, give the exact numbers.

Case distribution analysis and treatment:
The authors state that “there was no any sequelae” – how the sequelae were defined ? and how they were excluded?

Did really only 9 of 55 patients with HTN crisis receive multi-antihypertensive agents?

Discussion:
The sentence “Age is an indispensable factor for HTN crisis, ………..” is NOT correct and should be omitted.

The sentence on BMI should be reworded acc. the results of BMI –SDS data statistics.

Most children with stage 2 hypertension does NOT have symptomatic HTN crisis and therefore the sentence “We therefore believed the 99th percentile plus 5 mm Hg could be…..” should be omitted.

There is no discussion on similar previously published studies on HTN crisis in children – this must be added and similarities, differencies and controversies
should be discussed.

What is the novelty of this study in comparison to other previous studies?

Minor comments:

Results:

Give the results of different data also in percentages (i.e. n=8, x%).

Give exact numbers of renal diseases and endocrine disease (n=.., x%).

Neurofibromatosis is not primarily oncological but genetic disease and hypertension in children with NF is usually caused by renal artery stenosis. What was the cause of hypertension in children with NF?

The recurrence rate of HT crisis is high. When the HT crisis recurred in the patients?

Add (see Table 1) behind the words “…essential HTN had a significant correlation with age”

Patients with hypertensive encephalopathy:

How long was the “study period” ? (with recurrent HTN crisis)

Was MRI done in ALL children with HTN encephalopathy?

Were the MRI findings compatible with the diagnosis of PRES?

The exact values of lactate, NAA, choline and creatine levels are NOT given in Table 3.

Discussion:

What does it mean “..of high P”? 

Neurofibromatosis is in children usually NOT catecholamine producing tumor – should be changed.

**Level of interest:** An article of importance in its field

**Quality of written English:** Needs some language corrections before being published

**Statistical review:** No, the manuscript does not need to be seen by a statistician.