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Nephritis in Children

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INTRODUCTION

There is no doubt that lapses in efficiency of the management of various maladies in childhood lead to disorder or disturbance of the function of various organs of the body, and later on affect their reserves, ultimately affecting longevity. The recognition and realisation of this fact has increased the responsibilities of the pediatrician. Ever since the publication of Richard Bright's paper in 1827 and in spite of all the studies, observations and progress made, the various forms of renal affections still remain a matter of controversy and opinion.

This paper is based on the clinical study and personal observations of thirty cases of nephritis. The maximum age incidence was between five to ten years (73%). There were no cases below the age of three years. The disease was four times more common in males than in females. Familial incidence was not observed in this series.

Anasarca, puffiness of the face, vomiting, oliguria, fever, headache, hematuria (macroscopic) dyspnoea and convulsions were features in order of occurrence (Table 1). Generalised oedema was more marked. Quite a few cases had ascites. There was no case of anuria or visual disturbance. Twenty eight cases (84%) showed signs of hypertension. The normal systolic blood pressure between the ages of five to ten years is considered to be 94 to 109 plus/minus 15 mmHg and the diastolic pressure to be 55 to 58 plus/minus 9 mmHg according to GRAHAM. A rise in the diastolic pressure is more significant, since emotional and other factors have less affect on it. The systolic blood pressure was above 120 mmHg in twenty six cases and the diastolic was about 90 mmHg in twenty four cases. The highest systolic pressure was 196 mmHg and the highest diastolic pressure 150 mmHg. The mean systolic blood pressure was 146 mmHg and mean diastolic blood pressure was 100 mmHg It should be noted here that a diastolic pressure above 75 mmHg in children should be considered pathological and on this basis all these cases fall into the diastolic hypertension group.

Table 1: Nephritis – Symptomatology	
Anasarca	28 cases
Puffiness of face	24 cases
Vomiting	8 cases
Oliguria	7 cases
Fever	5 cases
Headache	5 cases
Hematuria (Microscopic)	5 cases
Convulsions	4 cases

Dyspnoea	3 cases

In this series there were five cases of hypertensive encephalopathy and seven cases of left ventricular failure. No cases of renal failure were observed. Hypertensive and encephalopathy cases had blood pressure levels of 196/130, 175/120, 175/110, 140/110 and 104/90 mmHg The diastolic hypertension persisted and the blood pressure range in cases with cardiac failure was from 196 to 130 mmHg systolic and 130 to 100 mmHg diastolic. Some interesting features were observed. These were that the serum proteins were normal in most cases in spite of oedema and the albumin globulin ratio was 1:1 in seven cases. Blood cholesterol was slightly raised in sixteen cases (200 to 275% mm). No fundal changes were seen in the cases with encephalopathy. Eye changes were rarely observed. No cases of renal failure were seen during the acute stage. Two cases gave a history of similar attacks one year previously.

Special features of the cases were hypertension and subsequent complications such as left ventricular failure and encephalopathy. The urine showed albumin, red blood cells and various types of casts.

MANAGEMENT

The cases were treated on accepted principles, which included rest, a salt poor diet, vitamins and adequate treatment of hypertension. Hypertension is responsible for the majority of severe complications, hence focussing attention on its adequate treatment might decrease the chances of complications. The question may be asked here as to whether hypertension is beneficial or not. Is it wise to attempt to lower it? There is a large volume of literature on this subject. There is no doubt that nature tries to help physiological processes but in so doing, it over-shoots the mark and it is here that the judgement of the physician is called for. Proper action at this time and the correct selection of a drug would materially help to improve the renal function and bring the blood pressure to an undetermined, unpredictable level.

Reviewing the ever increasing list of various hypertensive drugs and noting the various complicated procedures of their administration, one feels that a hypertensive drug, not very toxic, with little side-effects or effects on renal function, and one that could be most easily administered, would be an ideal one. Oral therapy is preferable to intravenous injections.

Venesection was done in most urgent cases. Magnesium sulphate 25-50% (½ to 1 c.c. I.M.) was tried and the injection was repeated every six, eight or twelve hours with or without digitalis. Lumbar puncture was done and found to be of inestimable value in cases with hypertension and encephalopathy. When these procedures did not relieve the hypertension the selected drug was used in addition.

In view of increasing favourable reports by various workers on *Rauwolfia serpentina* it was decided to use a preparation containing 4 mg of total active alkaloids of this drug. Serpinas-tablets (The Himalaya Drug Co., Bombay) were used. Serpinas in association with other forms of treatment helped in most of the cases to decrease the symptoms of hypertension and

bring down the systolic and diastolic blood pressure to normal values when given in doses varying from two to four tablets daily. No untoward effects on renal function or otherwise were noted in this series.

RESULTS

Out of thirty cases, one died of hypertensive encephalopathy and one of left ventricular failure. Both these patients were serious on admission and died within twelve hours of admission (Table 2).

Table 2: Nephritis - Results

	No. of cases	Cured	Died
Uncomplicated	2	2	Nil
Hypertension	28	26	2
Encephalopathy	5	4	1
Cardiac failure	7	6	1

It can be concluded even from this small group of cases that hypertension is an important dominant finding in this condition. It needs more attention and care in management and its successful management may avoid a catastrophe. Nephritis *per se* is a self-limiting disease but lapses in management may bring on untoward complications. One must always have respect for its potentiality and one should be aware of the effect it may have on the future health of the patient. Well-controlled long-term follow up studies on patients with nephritis may perhaps put us on the right pathway to the treatment of this distressing disease of childhood.