



# Monocentric study of epidemiological, clinical, and prognostic aspects of acute post-infectious glomerulonephritis in Haitian children

Exantus J<sup>1, 2,3</sup>, Pierre R<sup>1</sup>

1- Pediatrics Department, Faculté de Médecine et des Sciences de la Santé, Université Notre Dame d'Haïti ; 2- Pediatrics Department, Faculté de Médecine et de Pharmacie, Université d'Etat d'Haïti 3- Hôpital St Damien Nos Petits Freres et Sœurs. Port-au-Prince, Haïti

## Introduction

- Acute post-infectious glomerulonephritis (APIGN) is the commonest cause of acute glomerulonephritis in children with a clear male predominance.
- APGIN is characterized by hematuria, edema, hypertension and sometimes evidence of renal insufficiency (elevated blood urea and creatinine).
- The majority of the cases (97%) are seen in low-middle income countries (LMIC) and is associated with high morbidity and mortality.
- Through this study, we aimed to evaluate the burden of this glomerulopathy in children admitted at the only pediatric hospital in Haiti, Hopital St Damien Nos Petits Freres et Soeurs in Tabarre by reviewing its epidemiological, clinical, and prognostic aspects from June 2014 to June 2018.
- Regarding the climate, there is 1 dry season (november to march) and 1 rainy season (April to October).

## Methods

- We reviewed the medical records of children aged 2 to 14 years admitted with final diagnosis of APIGN from June 2014 to June 2018 in Hospital St Damien NPFS.
- The convenient sampling technique was used and all children with APIGN were enrolled. The patients were managed as per the institutional protocol.
- Post infectious glomerulonephritis was defined as features of acute nephritic syndrome and presence of infectious site e.g., pyoderma, pharyngitis, pneumonia or undetermined infection
- Serological evidence of recent streptococcal infection (recent pyoderma or pharyngitis with positive ASO titers and low serum complement 3 (C3) levels were noticed if present.
- Hypertension was defined as systolic and/or diastolic pressure values exceeding the 95th centile for age, sex and height.

## Objectives

- Describe the epidemiological, clinical and prognostic aspects
- Do a plea for diagnosis and optimal management of the precursor infection
- To emphasize the need to offer an optimal and early management of the patients to reduce the morbimortality related to the disease.

## Results

- One hundred fifty-two patients (152) patients were included with 106 males (69.73%). The group was divided in < 5 years old and > 5 years old
- The male to female sex-ratio was 2.3:1 and the mean age was  $6.90 \pm 2.8$ .
- In the <5 years old group, there were 34 cases (22.40%) and in the second group, there were 118 cases (77.60%).
- An infectious focus was found in 138 children (90.80%)
  - A cutaneous infection in 85 children (61.60%) with 63 boys. Scabies was found in 67/85 (78.80%). One child had Gilbert's ptyriasis rosea.
- Edema and high blood pressure were found in 100% of patients
- Oliguria was noticed at admission on only 19.1% of the patients
- Hypertensive encephalopathy in 20 cases (13.2%) on admission and 4 had seizures (20%)
- Length of stay  $6.90 \pm 4.80$  days
- Evolution : discharge for all but 3 deaths

Table 1. Main Characteristic of the population studied

Clinical signs	Main complication	Specific Exams Done
Edema 100%	Acute kidney injury 19.10%	Complement studies 0%
High blood pressure 100%	Acute pulmonary edema 11.8%	ASLO 9/13 patients
Macroscopic hematuria 43.10%	Hypertensive encephalopathy 13.2%	Severe anemia 7.8%
Proteinuria > 30 mg/dl 36.80%	Congestive cardiac failure 7.2%	Kidney ultrasound (42/152) - hyperechoic kidneys 17 (40.5%) -1 ectopic kidney (left) 2.4%

## Discussion-Limits

- APIGN is a frequent glomerular diseases in our center and the group of patients other than 5 years is the most frequent.
- Male predominance as in the other studies
- The diagnosis is clinical and Complement studies are not available in the center.
- Most of the patients were admitted during the rainy season.
- Edema and hypertension were seen in the majority of the patients.
- Cutaneous infectious lesions were the main precursor
- Good evolution but Follow-up was not considered in the study.

## Conclusion

- Our findings show that APIGN is still a challenge for the health system in Haiti.
- The mortality rate is quite small regarding our health care system.

## Future Work

- Collaborative study with all the pediatric training programs in the country to describe the real incidence of the APIGN
- Accurate serologic tests and Complement studies to be available in all these centers.

## Acknowledgments

- The authors want to thank the colleagues, the patients and their parents

## References

- [1] Adhikari S, Sitaula D, Regmi S, Parajuli B, Poudel S. Acute glomerulonephritis in children: a hospital-based study in a tertiary care centre in Nepal. *Journal of Chitwan Medical College*. 2022;12(39):9-12.
- [2] McGill Ugwu G. Acute glomerulonephritis in children of the Niger Delta region of Nigeria. *Saudi Journal of Kidney Diseases and Transplantation*. 2015;26(5):1064. doi:10.4103/1319-2442.164618
- [3] Bouazzaoui L el, Zahra F, El B, Fatima Z, el Bouazzaoui F, Zahra N. *Modes Évolutifs et Thérapeutiques de La Glomérulonéphrite Aigue Post Infectieuse d.*; 2013.
- (4) Exantus J. Glomerulonephrite aigue. *EMP. Pédiatrie*. [http://dx.doi.org/10.1016/S1637-5017\(20\)84956-4](http://dx.doi.org/10.1016/S1637-5017(20)84956-4)