PEDIATRIC STROKE ADMITTED TO PICU.

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METHODS

Stroke is an important cause of disability and death in children. The incidence of childhood stroke from population-based studies is estimated at 2.1-13.0 per 100,000 children per year (1, 2, 3, 4). There are no data from Algeria in the International Pediatric Stroke Study, which provides a worldwide overview on childhood stroke.

The aim of this study was to study the clinical manifestations, radiological findings, risk factors, and outcome of stroke in a case series of children hospitalized in PICU of Oran Algeria.

RESULTS

Patient Characteristics:

This study was conducted in the 11 years periods from 2007 to 2018. **57 children** were the study population (**40 boys and 17 girls**). The mean age at the time of presentation was **53.12 ± 54.6 months**. Median age is **36 months**.

Stroke Patterns and Causes:

70% percentage of the patients presented with ischaemic stroke, while the remaining 30% had haemorrhagic stroke (**Fig. 3**).

Clinical presentation: (Table 1) & Risk Factors : (Fig 4).

Table 1 : Clinical features of Stroke in 57 children	
	n (%)
Onset	
Acute	37 (64.9%)
Subacute	20 (35.1%)
Symptoms	
Seizures (generalized tonic-clonic)	44 (77.11%)
Headache	11 (19.3%)
Vomiting	11 (19.3%)
Anorexia/Poor feeding	6 (10.5%)
Irritability	3 (5.23%)
Agitation	2 (3.5%)
Extremity weakness	2 (3.5%)
Speech impairment	1 (1.7%)
Dizziness	2 (3.5%)
Neck stiffness	4 (7%)
Signs	
Fever	16 (28.1%)
Coma	28 (49.12%)
Hemiparesis and/or hemiplegia	8 (14%)
Ataxia	2 (3.5%)
Cranial nerve palsy	11 (19.3%)

Table 2 : Risk Factors of Stroke in 57 Children	
	N
Cardiac disease (N=4)	
Tetralogy of Fallot	2
Ventricular septal defect	1
Transposition of great artery, pulmonary stenosis, ventricular septal defect.	1
Vascular diseases (N=24)	
Moya moya disease	1
Carotid artery dissection (post traumatic)	1
Hypertension with chronic renal failure	2
Arteriovenous malformation	4
Cavernous malformation	2
aneurysm	1
Postinfectious vasculitis [Meningitis n=7 / Encephalitis n= 4 (1 herpes, 1 rubella)]	13
Hematological disease (N=3)	
Thrombosis N= 1	
Bleeding tendency N=2	
Protein S and C deficiency	1
Hemophilia B	1
Congenital bleeding disorders	1
Others (N=10)	
Leigh syndrome	2
Gastroenteritis with severe dehydration	5
Diabetic Ketoacidosis	1
Hydrocephalus (recent shunt)	1
Ear infection (mastoiditis)	1
Undetermined (N=16)

The tracheal intubation was necessity to 34 (59.6%). Mean length of mechanical ventilation was 6.2 ± 5 days.

Outcome :

- **Twenty patients (35.1%)** died, including **13 with ischemic strokes** and **7 with hemorrhagic strokes**.
- **Mean length** of stay in ICU was 13 ± 23 days.
- **The functional deficits** were classified as severe for 1 patient, moderate for 12 patients, and mild for 24 patients with short-term neurologic deficits.
- **Recurrence occurred** for 3 patients (5.26%), including 1 with moyamoya disease , 1 with Congenital bleeding disorders, and 1 with Tetralogy of Fallot treated to systemic-pulmonary shunt.

DISCUSSION

■ In our study, ischaemic stroke was the main pattern of stroke. These results were identical to the results of Chung and Wong and Abdelhady TE to KSA (5,6).

■ We noted that Vascular diseases, *Postinfectious vasculitis*, and cardiopathies, were the main risk factors identified in this case series. No case of sickle cell disease was reported in our case series. Cervicocephalic arterial dissection is an important but probably under recognized cause of stroke in children. Our series contains one case of CCAD, affecting the extra cranial part of the ICA (Fig. 8).

➔ Regarding clinical presentation in our study group, seizure was the commonest presentation. It was present in 77% of cases, followed by decreased level of consciousness (49%), and haemiplegia (14%).

➔ These were not comparable to that of Chung and Wong (5), who reported that seizures accounted for (52%), followed by haemiplegia (34%) and decreased level of consciousness (30%).

➔ The mortality rate in our series was 35%. In other studies, it was 28% (5), 23% (7), 20% (8) and 18% (5).

CONCLUSION

The etiologic pattern was different in our cohort. Intensive care admission was associated with a high mortality rate.

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