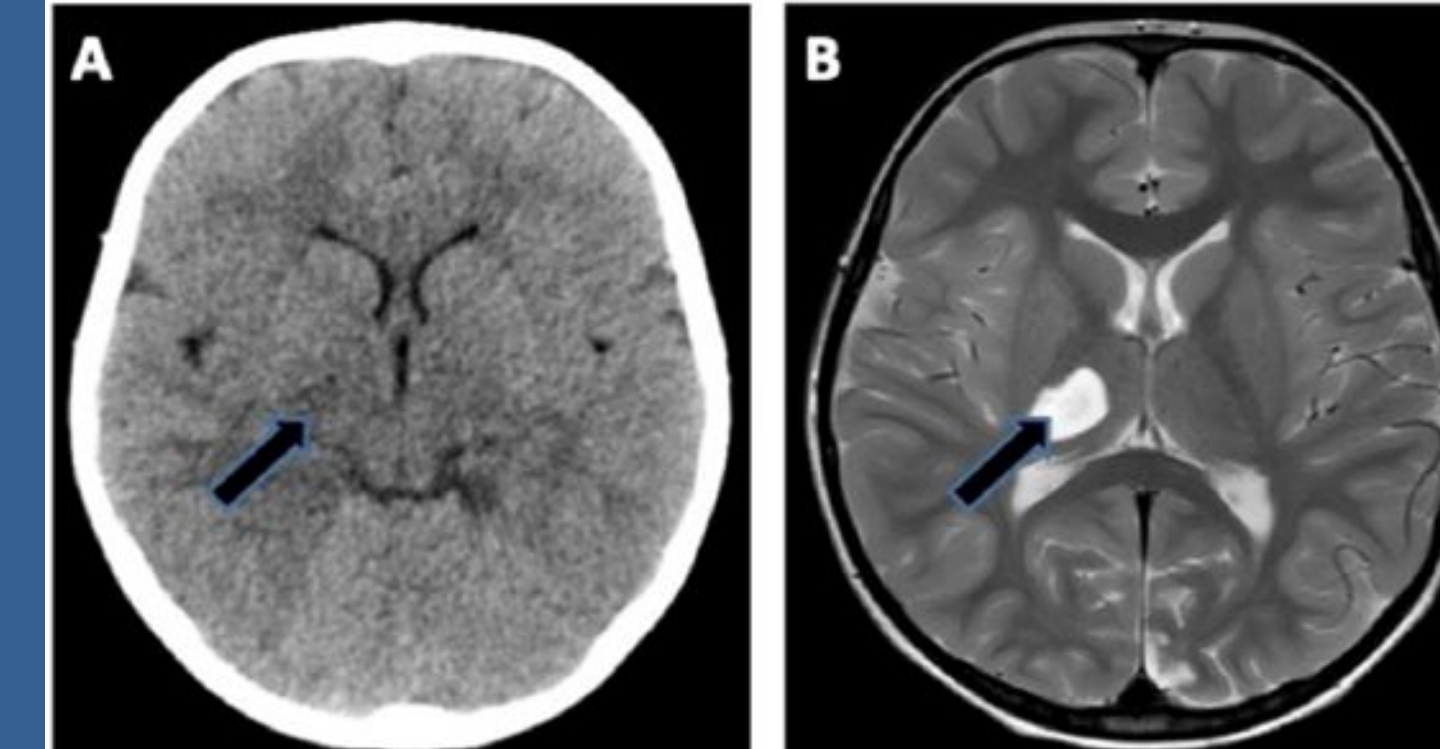


Acute Triage of Pediatric Stroke in Eastern Denmark

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5-year-old boy with right thalamic infarction and right vertebral artery dissection

Objectives

Fast diagnosis of pediatric stroke is critical for improving access to hyperacute therapies. In order to reduce diagnostic delay, a pediatric stroke pathway was implemented in Eastern Denmark since 2017. Triage was done by vascular neurologists with experience from adult stroke patients (VascN-adult). We describe our experience with acute triage of children with suspected stroke.

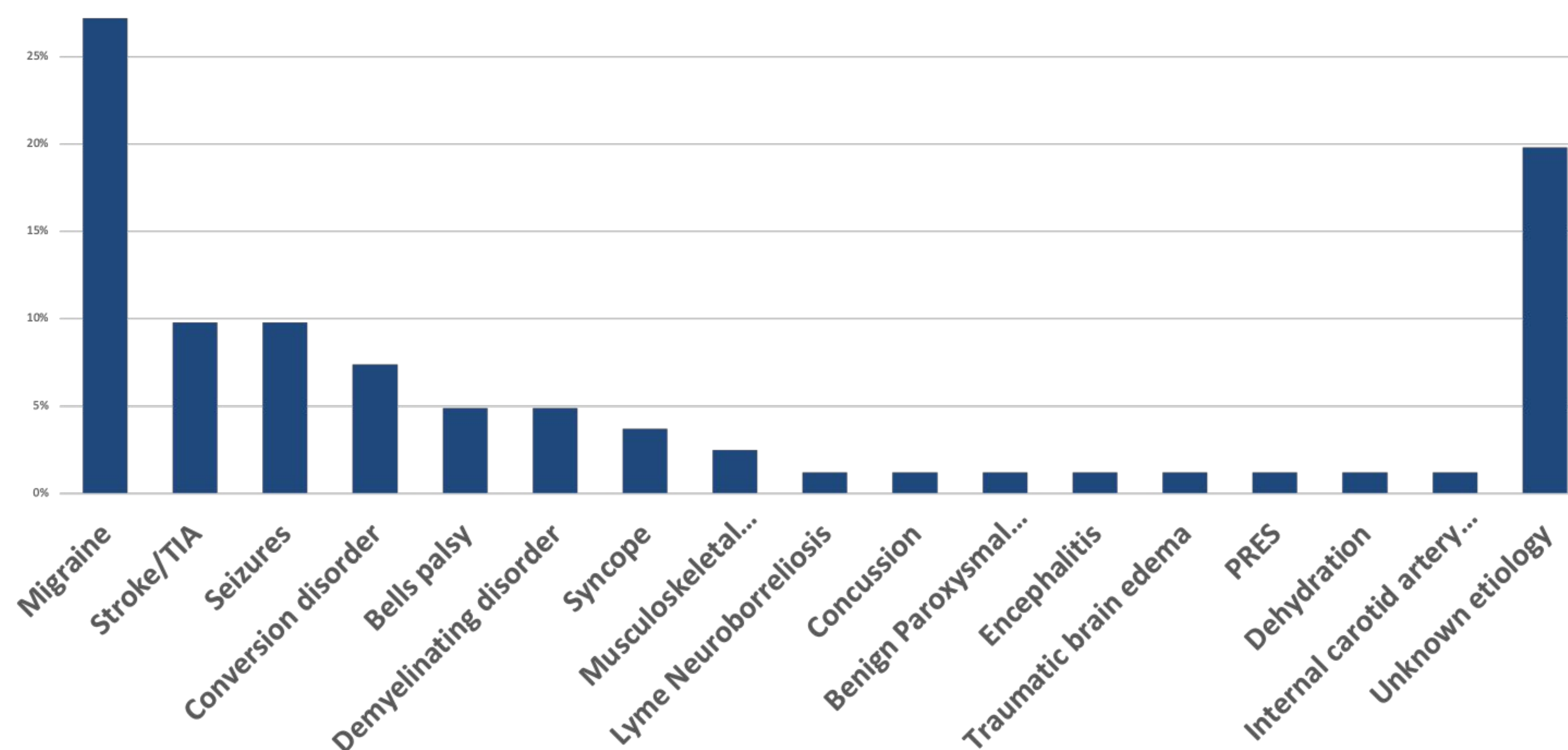
Methods

Prospective, consecutive registration of all pediatric patients with suspected stroke symptoms from Jan 2020 through Dec 2020, Eastern Denmark (census 2.6 million). Consultation requests to the VascN-adult were made from paramedics and clinicians in pediatric emergency departments (PEDs). Patients triaged by the VascN-adult, were retrospectively followed-up for clinical presentations, results of paraclinical examinations, and final diagnosis.

Results

Eighty-one patients with suspected stroke were registered; 32 (40 %) underwent acute stroke evaluation. Stroke was the final diagnosis in 8 patients (10 %); 2 had transient ischemic attack (TIA), 4 acute ischemic stroke (AIS) and 2 hemorrhagic stroke (HS) (subarachnoid hemorrhage (SAH) or intraparenchymal hemorrhage (IPH)). Patients with AIS, TIA and IPH, presented with focal neurological signs, referable to a distinct vascular territory. Presentations included central facial palsy, hemiparesis and aphasia. The patient with SAH presented with headache and impaired consciousness. No children with AIS met criteria for intravenous thrombolysis or acute endovascular recanalization treatment: two were < 2 years at presentation, one had minor-stroke (pedNIHSS < 4) and one had hypoperfusion-induced stroke.

The most common stroke mimics were migraine (26%), seizures (10%), conversion disorders (7%) and Bells palsy (5%).



Graph 1. Final diagnoses in children referred to the VascN-adult

No	Age,	Stroke subtype / TIA	Focal symptoms	Non-focal symptoms	Triage	Acute treatment
1	8 months,	Acute Ischemic Stroke	Hemiparesis		Evaluation in PED	Acetylsalicylic acid
2	12 years	Acute Ischemic Stroke	Hemiparesis	Impaired consciousness, generalized seizure	Evaluation in PED	None (hypoperfusion induced stroke)
3	1 year	Acute Ischemic Stroke	Facial palsy, hemiparesis		Evaluation in PED	Acetylsalicylic acid
4	4 years	Acute Ischemic Stroke	Facial palsy	Headache	Evaluation in PED	Acetylsalicylic acid
5	17 years	Hemorrhagic stroke (SAH)		Headache, impaired consciousness	Evaluation in PED	Coil embolization
6	17 years	Hemorrhagic stroke (IPH)	Dysarthric speech, facial palsy, arm paresis, unilateral somatosensory deficits	Headache	Acute stroke evaluation	Resection of Arteriovenous Malformation
7	6 years	Transient ischemic attack	Dysarthric speech, unilateral somatosensory deficits		Evaluation in PED	Acetylsalicylic acid
8	6 years	Transient ischemic attack	Unilateral somatosensory deficits	Headache	Acute stroke evaluation	Acetylsalicylic acid

Figure 1. Clinical presentations and acute treatment in children with stroke

Conclusions

Acute triage of suspected acute stroke by VascN-adult was feasible and suggested a marked need for fast evaluation of children with suspected stroke symptoms.

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