

Comparison of the Accuracy of a Paediatric Neurology Fellow and a Specialist Nurse While Following up with Children who have Epilepsy over the Phone

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Abstract

Epilepsy in children places a significant strain on the healthcare system. In addition to a lengthy waiting period for initial and follow-up visits, there are only a few pediatric neurologists available in the majority of developing nations, and caregivers face numerous financial and logistical challenges. To alleviate this burden, telemedicine has been proposed as an efficient alternative. A pediatric neurology fellow's telephonic consultation was compared to that of a specialty nurse; both oppose in-person consultation (the gold standard). One pediatric neurology fellow and one specialty nurse consulted telephonically with caregivers of epileptic children ages 4 to 18 at least 24 hours before their scheduled hospital appointment in a random order. Another pediatric neurology fellow who was blind to the telephonic consultation documented the same after the face-to-face interview during the hospital visit.

Keywords: Epilepsy • Pediatric Neurology • Nervous System

Introduction

The use of information technologies and telecommunications to provide health care services to a patient who is separated from the physician is known as telemedicine. In the field of neurology, which is also known as teleneurology, the scope and use of telemedicine have rapidly expanded in recent years. It began with the treatment of acute strokes and is now quickly expanding to include the treatment of people with multiple sclerosis, Parkinson's disease, and epilepsy. The two key variables driving the always expanding interest for telemedicine in Nervous system science are restricted admittance to trained professionals (Nervous system specialists) and troubles looked by these patients while going to for eye to eye conference. The majority of caregivers in India have to wait a long time, travel a long distance, face a lot of logistical challenges, and frequently also face a lot of financial difficulties because there are few pediatric neurologists in the country and they are only available in large cities [1,2].

Description

India's annual economic burden from epilepsy, which affects nearly 5 million people, is 68.75 billion Indian Rupees. Due to the hospital visit and diagnostic workup, parents are responsible for the majority of the total costs associated with epilepsy in children during the first year after diagnosis. When a patient is referred to a tertiary care center and needs to be evaluated frequently at regular intervals, the associated costs of the initial and follow-up health care visits make up about 80% of the total cost. The child with epilepsy

is reviewed by the general practitioner or pediatrician for follow-up visits, and only those with drug-resistant epilepsy and complicated seizure semiologies are referred to the pediatric neurologist on a regular basis. This is a less expensive alternative to the same treatment [3-5].

However, due to general practitioners' lack of familiarity with epilepsy treatment guidelines, this is frequently impossible in developing nations. The majority of stable epilepsy patients do not require extensive clinical and diagnostic evaluation or major drug modifications at follow-up visits, in contrast to the initial evaluation. Utilizing telemedicine by a specialty nurse who has been trained to deal with epilepsy cases is a tangible solution to reducing the amount of time spent and money spent on health care visits in such situations. Patients' health care costs, the time it takes to schedule an appointment with a busy pediatric neurologist, and the workload of already overworked specialists could all be reduced as a result. On the off chance that effective, it can possibly prudently rearrange the functioning long periods of epilepsy experts towards the consideration of somewhat more confounded cases. The quality of care for children with epilepsy is not likely to be compromised because parents' reporting of symptoms and drug compliance serve as the primary criteria for follow-up visits. However, in stable childhood epilepsy patients, diagnostic studies with sufficient sample sizes are required to determine whether a specialty nurse's telephone consultation can be an equally effective substitute for face-to-face consultation, the gold standard for follow-up care. The purpose of this study was to compare the diagnostic utility of a pediatric neurology fellow's telephone consultation with that of a trained specialty staff nurse; both against the eye to eye conference by another pediatric nervous system specialist (highest quality level) to distinguish basic clinical occasions in kids with epilepsy precisely [6-8].

This prospective follow-up study was carried out in the Department of Pediatrics, All India Institute of Medical Sciences, New Delhi, over the course of two years, from November 2016 to March 2018, with the goal of comparing the diagnostic accuracy of telephonic consultations conducted by a pediatric neurology fellow and a specialty nurse. After receiving informed consent from the caregiver, all of the patients were enrolled in pediatric neurology specialty clinics run solely by qualified pediatric neurologists. Before the study began, the institutional ethical committee granted ethical approval. The primary objective of the study was to compare the face-to-face consultation (the gold standard) with the diagnostic accuracy of a telephone consultation between a trained specialty nurse and a pediatric neurology fellow to identify any critical clinical events in children with epilepsy aged 4 months to 18 years. In order

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to identify critical clinical events in terms of assessing spasticity/dystonia, development (gaining, static, regressing), feeding issues, vision and hearing issues, contractures, and bedsores, drug adverse events, drug noncompliance, seizures, and other adverse events, the secondary objective was to compare the diagnostic accuracy of the two groups [9].

Only after 12 weeks of ACTH/Steroid/Vigabatrin therapy had been completed were confirmed cases of West syndrome included in the study based on standard, internationally accepted criteria. Affirmed instances of Lennox Gastaut disorder, essential summed up epilepsy, adolescent myoclonic epilepsy, adolescence nonattendance epilepsy, and other characterized electroclinical conditions were additionally remembered for the review. The study only included children with neurocysticercosis and seizures who had at least five neuroimaging lesions, were not receiving cysticidal therapy at the time of enrollment (such as calcified granuloma), or had completed cysticidal therapy. Children with Lennox-Gastaut syndrome (LGS) who have not undergone an initial etiological evaluation, children with West syndrome who have not completed 12 weeks of ACTH/steroid/vigabatrin therapy, and complicated cases of neurocysticercosis (with >5 parenchymal lesions, intraocular and intraventricular) were excluded. The cases were also ruled out if the primary caregiver was unavailable during the initial visit consultations.

For the purpose of the study, critical clinical events were defined as those that occurred while treating epilepsy and were related to the course of the disease or the drug therapy. Seizures, signs of elevated intracranial pressure, adverse events related to the AED, as well as excessive sleepiness, irritability, neurological deficits, and infections were among these. Presence of at least one of coming up next was considered as the medication related antagonistic occasion: skin rash without fever, dizziness, or vertigo, recent onset of imbalance while walking, standing, or sitting. Drug non-compliance was defined as either not taking the anti-epileptic medication prescribed or taking another medication, taking an insufficient or excessive amount of the medication, or taking the medication at times other than the prescribed intervals. The presence of any two of the following conditions was considered to be elevated intracranial pressure: headache, irritability, excessive drowsiness, and blurred vision [10].

Conclusion

The specialty staff nurse and the pediatric neurology fellow conducted weekly telephone consultations on a specific day and time (48 to 72 hours before the scheduled hospital visit). The parents or guardians of the patients were informed of these consultations when they signed up for the program. The trained specialty nurse and the pediatric neurology fellow called one group of patients, and the other group called the trained specialty nurse and the pediatric neurology fellow called the other group. During the clinic visit, the enlisted patients were evaluated by specialist B (pediatric nervous

system science workforce, highest quality level). A pre-designed, structured questionnaire to record significant clinical events was part of the consultation. With separate proformas for children with the West syndrome and LGS, primary generalized epilepsy (PGE), and neurocysticercosis, this questionnaire was disease-specific.

Acknowledgement

None.

Conflict of Interest

None.

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