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When following up with Children who have Epilepsy over the Phone, a Paediatric Neurology Fellow and a Specialist Nurse are compared for Accuracy

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Abstract

Children with epilepsy put a significant strain on the medical system. There are few pediatric neurologists in most developing nations, and caregivers face numerous financial and logistical obstacles in addition to a lengthy waiting period for initial and follow-up visits. Telemedicine has been proposed as an effective alternative to lessen this burden. The telephonic consultation of a pediatric neurology fellow was compared to that of a specialty nurse; In-person consultation (the gold standard) is opposed by both. At least 24 hours before their scheduled hospital appointment, one pediatric neurology fellow and one specialty nurse consulted telephonically with caregivers of epileptic children ages 4 to 18 in random order. After the face-to-face interview during the hospital visit, another pediatric neurology fellow who was unaware of the telephonic consultation documented the same thing.

Keywords: Pediatric neurology • Nervous system • Epilepsy

Introduction

Telemedicine is the process of providing health care to a patient who is not in close proximity to a physician through the use of telecommunications and information technologies. Telemedicine's scope and application in the field of neurology, also known as teleneurology, have grown rapidly in recent years. It started out treating acute strokes and is now quickly expanding to treat multiple sclerosis, Parkinson's disease, and epilepsy. The limited access to trained professionals (nerve system specialists) and the issues faced by patients while attending face-to-face conferences are the two main factors driving the growing interest in telemedicine in nervous system science. Because there are few pediatric neurologists in the country and they are only available in large cities, 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 [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 to identify critical clinical events in terms of assessing spasticity/dystonia,

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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

Weekly telephone consultations were held between the pediatric neurology fellow and the specialty staff nurse on a predetermined day and time (48 to 72 hours prior to the scheduled hospital visit). These consultations were made known to the patients' parents or guardians when they signed up for the program. One group of patients was called by the trained specialty nurse and the pediatric neurology fellow, while the other group was called by the trained specialty nurse and the pediatric neurology fellow. Specialist B (pediatric nervous system science workforce, highest quality level) evaluated the enlisted patients during the clinic visit. The consultation included a structured, pre-designed questionnaire to record significant clinical events. This questionnaire was disease-specific, with separate proformas for children with West syndrome and LGS, primary generalized epilepsy (PGE), and neurocysticercosis.

Acknowledgement

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Conflict of Interest

None.

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