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Encephalitis guidelines: a recipe for success?

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Knowledge is of two kinds. We know a subject ourselves, or we know where we can find information on it.

Samuel Johnson (1709–84)[1]

Clinical governance, evidence-based medicine and guidelines are regarded with suspicion by some clinicians.[2] Audit, however, has become embedded in clinical practice, a core activity for junior doctors and obligatory content for medical interviews. Good audits on really important topics still sometimes produce results so painful that changes in clinical practice must follow. In the current issue of *Clinical Medicine*, an audit of viral encephalitis management in a single centre by Bell and colleagues highlights inconsistencies of practice which, if representative of other units, suggest suboptimal management of a potentially devastating but treatable condition.[3]

Viral encephalitis is uncommon, a typical district general hospital, for example, may see only one or two cases per year.[4] It presents non-specifically with headache, fever, altered consciousness, seizures and behavioural disturbance, a symptom complex with a broad differential diagnosis.[5] Children particularly may present atypically. The variable clinical presentation means its diagnosis is often delayed; even the reliable biomarker – polymerase chain reaction (PCR) to herpes simplex virus – may be negative in the first 10 days and positive overall in only 50%.[6] When suspected and treated promptly with aciclovir, the mortality of viral encephalitis is massively reduced from 70 to 20%.[7] Aciclovir is well tolerated and generally safe (with notable exceptions) and most effective if started within 48 hours. Perhaps the principal reason for delayed diagnosis and treatment of encephalitis is that acute physicians do not consider it sufficiently often or early. When they do, it is still uncommon enough for 90% of those prescribed aciclovir for encephalopathy to have different diagnoses at discharge.[3] Such a policy of 'over-diagnosis and over-reaction', however, is justified to prevent the devastating neurological sequelae of viral encephalitis.

Cerebrospinal fluid is necessary to diagnose viral encephalitis definitively with PCR, and to exclude bacterial, fungal or paraneoplastic encephalopathies. The need for computed tomography (CT) imaging before diagnostic lumbar puncture (LP) in suspected encephalitis remains surprisingly contentious, with no agreed UK audit standard. The 2001 guidance for LP in adults with meningitis perhaps needs reappraisal as access to CT improves.[8] Rapid imaging and specialist interpretation are increasingly available in emergency units to meet rigorous targets for stroke thrombolysis and head injury. Although CT may be normal in early viral encephalitis, brain shift and hydrocephalus (reliably identifiable on CT) must be excluded before LP,[6] at least in health systems where such imaging is readily available. Bell *et al*'s audit identified significant CT brain scan abnormalities among 21 patients with suspected encephalitis: three new strokes, two tumours, one subdural haematoma and one subarachnoid haemorrhage.[3] Magnetic resonance brain scanning, preferably with diffusion weighting, might identify cerebral changes facilitating an early positive diagnosis of viral encephalitis. However, this modality is impractical in confused and deteriorating patients, especially out of hours; CT scanning remains the current standard emergency imaging modality for suspected viral encephalitis.

Notwithstanding the imaging issue, even LP itself may be performed inconsistently or incompletely. If 6/17 (35%) omit to measure opening pressure and 4/17 (24%) forget to take a contemporaneous blood glucose then valuable data are being lost and the diagnosis delayed or incomplete.[4] The skill of LP is a core competency for medical trainees and these audit findings should stimulate a review of their learning.

Despite research advances in viral encephalitis, the monopoly of knowledge seems to be in the wrong heads and the wrong journals. A trawl through emergency medical literature in 2004 found no published description of the need for early aciclovir therapy in viral encephalitis, in marked contrast to widely publicised indications for early antibiotics in bacterial meningitis.[10] The baton of early recognition and proactive aciclovir treatment must now be passed to acute physicians and emergency department clinicians: 'Infrequent occurrences with catastrophic consequences are not best studied through small case series'.[9]

A simple and auditable guideline is clearly needed. The Infectious Diseases Society of America has only recently published evidence-based clinical guidelines on viral encephalitis[7]; UK guidelines are currently being developed.[5] Evidence-based guidelines inevitably contain areas of uncertainty but this should not prevent their implementation. Pragmatic guidelines evolve as new evidence emerges, as exemplified by the UK Resuscitation Council's excellent advanced life support guidelines.[11] Simply writing an evidence-based guideline will not influence practice: the next audit cycle step is to communicate and implement the guideline. A guideline approach to managing acute encephalopathy will not identify every case of viral encephalitis, but is likely to improve the outcome for many. The

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message of raised awareness must now be disseminated to acute care physicians and the necessary skills for encephalitis diagnosis (especially LP) given renewed teaching focus. Following a cook-book approach to medicine may be unpalatable to some, but for 'infrequent occurrences with catastrophic consequences' it may provide the recipe for success.

Competing interests

PS is a member of the UK Encephalitis Guidelines Panel.

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