NICE guidelines

Are we ready for NICE head injury guidelines in Scotland?

I J Swann, T Kelliher, J Kerr

The major challenge for A&E is implementation of realistic guidelines

Any guideline that gives priority to the prompt identification of patients at risk of brain injury deserves to be supported and timely imaging (CT brain scan or skull radiograph, or both) is an essential part of this process. Recently published guidelines recognise the increased availability of emergency CT in the UK.[1–3] The Scottish Intercollegiate Guidelines Network Publication number 46 (August 2000) recommends the increased use of CT brain scans for selected patients with mild head injury including those with the radiological demonstration of a skull fracture.[2]

The National Institute for Clinical Excellence: Clinical Guideline (2003)[3] includes an adapted form of The Canadian CT head rules,[4] which lowers the threshold for scanning patients with mild head injury much further and relies very little on the use of skull radiographs.

A concern is whether such guidelines can be safely and effectively implemented if hospitals in the UK lack the necessary resources for easy access to out of hours CT.

The Canadian CT head rules were based on the study of patients who had a history of loss of consciousness or post-traumatic amnesia after blunt head injury. In Steill's paper, the population studied from the 10 Canadian hospitals appears to be less violent than that of some major inner city A&E departments in the UK. Most of the injuries were attributable to falls or road traffic accidents. Of the 11% attributable to assault most were by use of hands or feet rather than blunt objects and only 8% of assaults suffered significant ''brain injury'' as evident on CT scans.

In the UK attempts to establish the probable impact of the NICE guideline are underway and not surprisingly indicate that there would be a significant increase in the CT scan rate if the guideline was adhered to. It remains to be seen how well individual hospitals can cope with the increased demand for CT scans.

NICE recommend immediate request for CT of patients who still have depressed GCS (14/15) two hours after injury. This should have support from those responsible for the observation of such patients on wards if it detects those patients needing referral to a neurosurgical unit while they are still in the A&E department. Clinical variables such as coagulopathy and vomiting (twice) are rightly included as warranting a low threshold for CT but the emergency scanning of all patients over 64 years of age with any amnesia may prove difficult to implement.

Most head injured patients are GCS 15 on arrival in A&E, with little or no post-traumatic amnesia or primary brain damage. If they have a skull fracture their risk of needing an operation for intracranial haematoma is increased several hundred times.[5 6] In most Scottish A&E departments skull radiographs are still used as a screening method to detect skull fractures in mild head injury (GCS13–15). Nevertheless, in the past few years since the development of the SIGN guideline there has been a significant increase in the utilisation of CT brain scans, some instead of and some after skull radiography.

In accordance with the SIGN guideline, we believe there is still a role for skull radiological examination, for example, in patients with a significant mechanism of injury who may have sustained a depressed skull fracture attributable to blunt or penetrating trauma. We are concerned that, if NICE guidelines are followed, A&E doctors may not request CT scans until such patients deteriorate from intracranial haematoma or brain injury.

Ultimately, the most contentious aspect of the NICE guidelines is their advising an immediate CT scan in any patient who has been GCS 12 or less at any point since injury. This would include many patients who in retrospect have simply been intoxicated or have other reversible causes of depressed consciousness and may result in a large proportion of unnecessary scans. Furthermore, from a logistical viewpoint, if it were agreed that all such patients did require a CT scan, most radiology services would be unable to cope with the workload. It is ironic that The London Royal College of Radiologists recommends the Canadian CT head rules and yet their members are often not in a position to comply with their implementation![7]

Some lowering of the threshold for early CT is welcome but not to the degree or in the form required by NICE. While the content of the SIGN guideline is not perfect it is increasingly accepted by radiologists and clinicians and we would recommend it as a more realistic alternative to NICE. If further improvement in the head injury service is to be achieved, the major challenge for A&E is implementation of realistic guidelines. This requires education of medical and nursing staff with an emphasis on early selection for imaging, frequent charting of observations, and improved documentation.

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NICE guidelines

NICE head injury guidelines

T J Coats

Emergency physicians in the UK will be scanning more patients with head injury and should have easier access to CT

The current discussion about the NICE head injury guidelines illustrates both the strengths and the weaknesses of the system of national guidelines for the NHS. We are still on the learning curve of how we should use this national advice in emergency medicine practice. When there is good evidence that tells that a treatment works or that a treatment does not work a guideline is easy to write. However, when there is weak evidence, as the research has not been done, writing a guideline becomes more difficult.[1] Simply leaving a gap in the guideline would not be useful, however the ''best evidence available'' becomes a consensus opinion among experts. Different groups of experts may come to different opinions and an individual emergency physician may, because of personal clinical experiences or particular local circumstances, disagree with the consensus. Guideline developers recognise that there is no way of telling who is right and who is wrong (until further research is conducted) and so label consensus opinions with the lowest level of evidence (grade D).

Each step in a guideline should therefore be regarded rather differently. Much more weight should be given to the parts of a guideline supported by higher grade evidence, as we are more certain that this is the right thing to do for the average patient. The parts supported by grade D evidence are much more open to question and modification to fit an individual patient. We should not think that once a guideline has been developed it should be slavishly followed in all circumstances. Unfortunately when guidelines are discussed, flow diagrams constructed, or departmental guidelines written, the underpinning evidence becomes removed and all steps look as if they have the same weight.

Clinical experience also comes into play here. I would expect an emergency department SHO to closely follow a guideline. However, I would also expect an experienced emergency physician to know which parts of a guideline are based on weaker evidence and to exercise more clinical skill in these areas, so that management is tailored to the individual patient. Our audit systems also need to become more sophisticated in the way that they use guidelines to define ''right'' and ''wrong'' treatment, although I doubt that the politicians (and lawyers) will be weaned from their belief that medicine is full of certainties. Simply ticking the box that says ''followed the NICE head injury guideline'' does not take into account the subtleties of individual patient management and will not provide meaningful audit or a good assessment of performance.

It is debatable how the availability of resources should influence the development of a guideline. The inability of a hospital to provide a computed tomography (CT) service that can cope with the NICE head injury guidelines seems to be a strong argument for improving the service rather than changing the guideline. The burden on radiologists does not need to be great as there is no reason why emergency physicians should not interpret a CT head scan, which can be less difficult than interpreting a chest radiograph.

In the UK the greatest effect of the new guidelines may be an improved access to CT for all head injured patients. It is rather ironic that the Canadian CT head rules were used in North America to decrease the number of CT scans performed on minor head injuries, whereas in the UK they will have the opposite effect. Estimates of the numbers of additional CT scans in the ''average ED'' seem to vary from 48 a year[2] to 725 a year.[3] Experience from the introduction of a guideline similar to NICE is particularly important,[4] and indicates that the upper figure is wrong. The Cambridge experience also questions whether admissions will be reduced—it will interesting to see if the admission rate falls as more experience is accumulated and we become confident with the new approach.

In the absence of comprehensive evidence guidelines are always going to be imperfect. The group that developed the NICE guidance consulted widely among practising emergency clinicians and has been transparent about the details of the evidence on which the guidance is based (full details are on the NICE web site but not in the printed format). There are a number of areas for future research—some of which is already underway. This has been acknowledged in the short interval before the guidelines are due for a review (June of next year). There seems to be a consensus that some lowering of the threshold for CT is desirable,[5] but uncertainty about management of some subgroups. The details can be debated, but the underlying messages of the NICE head injury guidelines—that emergency physicians in the UK will be scanning more patients with head injury and will have easier access to CT—should be endorsed.

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