Cognitive dysfunction after concussion - Authors did not to comment on the single truly significant result

Citation for published version:

Link:
Link to publication record in Edinburgh Research Explorer

Document Version:
Publisher's PDF, also known as Version of record

Published In:
BMJ

Publisher Rights Statement:

General rights
Copyright for the publications made accessible via the Edinburgh Research Explorer is retained by the author(s) and / or other copyright owners and it is a condition of accessing these publications that users recognise and abide by the legal requirements associated with these rights.

Take down policy
The University of Edinburgh has made every reasonable effort to ensure that Edinburgh Research Explorer content complies with UK legislation. If you believe that the public display of this file breaches copyright please contact openaccess@ed.ac.uk providing details, and we will remove access to the work immediately and investigate your claim.
Cognitive dysfunction after concussion

Authors did not to comment on the single truly significant result

Editor—Our finding of an increased rate of cognitive dysfunction among subjects tested within one week of sustaining concussion was unsurprising given the numerous studies pointing to the same conclusion.1 The marginal lack of significance of the binomial test (P = 0.08) is due to a lack of statistical power when only eight subjects are studied. That the lower limit of the 95% confidence interval for the risk ratio should nevertheless lie above unity (1.23) is certainly anomalous, but such discrepancies can arise given the different calculations involved.

Interpretation of significant cognitive dysfunction over 200 days after concussion needed to be deferred until the results for those injured after being tested were examined. It then seemed that there was an increased rate of cognitive dysfunction among subjects whether they were tested before or after sustaining concussion. This pointed to cognitive dysfunction being a risk factor for concussion. That the risk factor had manifested itself more strongly in those subjects who were injured after being tested could have been due to their being relatively older at injury than those injured before being tested (four fifths of whom were injured more than six months before testing). We found a lower rate of cognitive dysfunction among those injured at age ≤ 18 than those injured at age ≥ 19. Strachan et al suggest that this argument would be strengthened if both groups were subdivided according to whether they sustained concussion before or after being tested. The table shows the relevant data.

The table provides only partial support for our argument in that the age effect appears only among those injured after testing. There is, however, substantial confounding between age at injury and whether testing took place before or after the injury. Furthermore, dichotomising age involves a reduction of information. In a stepwise logistic regression we found age at injury to be significantly related to the test score (disfunctional/normal) (P = 0.017), and thereafter there was no significant contribution of injury before or after testing (P = 0.45). In default of alternative hypotheses, we therefore continue to believe that the poorer performance in cognitive tests of those young men who were tested before they sustained concussion may well be explained by factors related to their relatively greater age at injury.

Determining prognosis after acute myocardial infarction in the thrombolytic era

Rescue angioplasty after failed thrombolysis may put patients at risk

Editor—Beller brings to readers’ attention the fact that routine invasive procedures after acute myocardial infarction offer no significant benefit over that offered by the routine practice of risk stratification with non-invasive methods.1 We are concerned, however, with the blanket statement that high risk patients should have early angioplasty or rescue angioplasty after failed thrombolysis. This technique should be used with caution.

A meta-analysis by Ellis et al indicated a mortality of 10.0% after the procedure, either

| Number (percentage) of men who were injured before or after test of cognitive function, by age at injury |
|---|---|---|---|---|---|
| Age at injury (years) | Injury before test | Dysfunctional | Normal | Total | Injury after test |
| | | | | | Dysfunctional | Normal | Total |
| ≤18 | 150 (24.8) | 456 (75.2) | 606 | 4 (8.8) | 37 (90.2) | 41 |
| >18 | 21 (22.3) | 73 (77.7) | 94 | 154 (32.2) | 325 (67.8) | 479 |
| Total | 171 | 529 | 700 | 158 | 382 | 520 |
Author's reply

Editor—Lim and Shiels make a valid point regarding the increased risk of rescue angioplasty after presumed failed thrombolysis, but I never addressed the issue of early angioplasty in my editorial. The thrust of my discussion regarding risk stratification related to the identification of clinical variables and variables determined with non-invasive tests that could be used to select those patients after infarction who are most likely to benefit from coronary angiography and coronary revascularisation.

With respect to clinical variables, I mentioned the combination of rules in over a third of the lung field, hypotension, and sinus tachycardia on admission was an important observation that indicated a high risk status, since these haemodynamic alterations reflect a large area of myocardium at jeopardy with ischaemia or necrosis, or both; they can also point to underlying multisystem disease or a large infarct, or both. I agree that each one of these haemodynamic changes in isolation is not highly specific for a high risk designation. Certainly, crackles at the lungs bases alone without evidence of other signs of left ventricular pump failure can indicate atelectasis or pulmonary disease. Hypotension in isolation, without sinus tachycardia and pulmonary rates, can be due to volume depletion or right ventricular infarction and not be secondary to extensive left ventricular dysfunction.

The main message of my editorial was that a routine invasive strategy for risk assessment before discharge is not superior to a watchful waiting, non-invasive strategy in which patients undergo angiography for high risk clinical findings or for spontaneous or inducible ischaemia within or remote from the infarct zone. Recent data reported from the VA non-Q wave infarction strategies in-hospital trial, in which 920 patients with non-Q wave infarction were randomised to an initial conservative strategy or an initial aggressive strategy, support this approach. At one year after discharge there was no difference in cardiac death or recurrent infarction between the two groups. Also, new data from Yusuf et al showed no difference in outcome for patients with infarction admitted to hospitals with cardiac catheterisation facilities (catheterisation rate 66%) compared with those admitted to hospitals with no catheterisation facilities on site (catheterisation rate 3%).

George A Bell
cardiologist. Division of Internal Medicine, University of Virginia Health Sciences Center, Charlottesville, VA 22908, USA


Editor—Mayou points out that the management of patients with medically unexplained physical symptoms is often inapparent, even though effective interventions are available. He essentially attributes this to the persistence of the idea of “mind-body dualism” in the medical profession, which neglects important interactions between physiological, psychological, and social factors.

I agree that he says about this socially and economically important subject, but I would emphasise another factor: our scientific ignorance and frequent arrogance. Too easily and too frequently we attribute to mental illness symptoms that turn out to be those of well defined organic diseases (which does not exclude the role of superimposed social or psychological factors). Mayou says “there is scant provision … for the patient with somatic complaints who has neither physical disease nor severe mental illness.”

This sentence reminds us that these patients tend to be forgotten, but “recognised” or “known” should probably have preceded the term “physical disease.”

Patients with muscular symptoms are a good example of this. Many, classified years ago as mentally ill, later turned out to have well defined disease. A typical example is patients with McArdle’s disease, who suffer from chronic muscle fatigue with exercise. Many—at least, the older ones—were initially classified as having purely psychological or psychiatric disease; they were consequently regarded as being lazy and dealt with as such, typically when they were conscripted into the army. Even worse, they were usually forced to exercise, which has since been shown to be potentially dangerous since it can lead to muscle damage and renal failure. They are now known to have a genetically determined lack of a muscle enzyme essential for glycogen breakdown and use for energy production (muscle phosphofructokinase deficiency).

These errors of classification have moral, psychological, and economic implications for patients, their families, and society. Some doctors still see it as unwarranted of their own ignorance. We should be modest and cautious, perhaps stating that our conclusions are “to the best of our knowledge” and may not be correct. Even though the list of unexplained diseases and symptoms is slowly decreasing through scientific progress, it is unlikely ever to disappear totally.

Philippe Jehenson  Medical researcher
Service Hospitalier Frédéric Joliot, Commissariat à l’Energie Atomique, 91406 Orsay, France


The caring doctor is an oxymoron

General practice will develop best if “caring” is replaced by professionalism

Editor—Mackenzie’s hypothesis that the term “the caring doctor” is an oxymoron struck a chord with many doctors I spoke to. I have long thought that general practice will develop best if we replace the shame of caring with better professionalism. This does not stop us practising good medicine in a compassionate and considerate manner. We spend a lot of time teaching consulting skills to registrars. Good consulting is not the same as “niceness,” and the term “the caring professions” is patronising and arrogant.

There is still a place for the registered list of patients, but in a computerised world it is a tool for targeting and delivering good medicine—for example, in secondary prevention. The modern world is demanding of us. If general practice is to remain vibrant and attract high quality recruits we have to develop practice beyond the personal attributes of individual doctors. We need to think imaginatively, to continue the drive for better organisation, to use information technology to the full, to recognise the strengths of other members of the team, to delegate...