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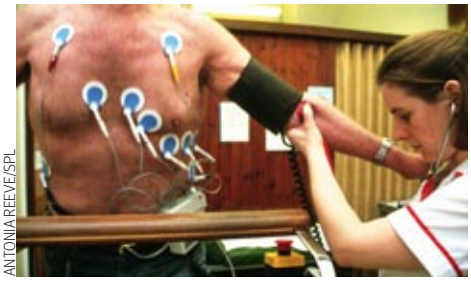
LETTERS

NICE AND CHEST PAIN DIAGNOSIS

W(h)ither the exercise ECG?



ANTONIA REEVE/SPL

Bourdillon questions guidance from the National Institute for Health and Clinical Excellence (NICE) that exercise electrocardiography (ECG) has no role in diagnosing obstructive coronary disease causing angina (or in diagnosing angina, as NICE says incorrectly).[1 2] Perhaps a more cogent reason for questioning this conclusion is that NICE considered only diagnosis and took no account of downstream testing or clinical outcome. Its cost effectiveness model should therefore not have been used to determine overall best practice. For example, if a diagnosis were achieved using an anatomical test, such as computed tomographic coronary angiography, most cardiologists would want to know, among others, the exercise time to assess the need for revascularisation on prognostic grounds alone in addition to medical treatment. A diagnostic strategy that included treadmill ECG or functional imaging in the first place may then be more cost effective.

Additional difficulties are that NICE's model assumed perfect accuracy of invasive coronary angiography (an anatomical test) for diagnosing angina (a functional problem) and that all patients with coronary disease require angiography. These unrealistic assumptions lead to the comparatively low likelihood threshold above which initial angiography is cost effective, but more realistic models differ.[3 4] NICE also assumed that the different imaging techniques have similar accuracy and cost. In fact, only myocardial perfusion scintigraphy is readily combined with treadmill testing, and equivalence cannot be taken for granted without more detailed analysis.

I support NICE's conclusions in general, but I regret that it did not consider the practicality of implementation and did not extend beyond diagnosis. I am concerned that "a good start" may suffer a fate similar to the technology appraisal of myocardial perfusion scintigraphy, which was largely ignored by UK cardiology.[5]

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Competing interests: SRU is a non-invasive cardiologist specialising in cardiac imaging.

1 Bourdillon P. Exercise ECG useful in finding coronary artery disease. *BMJ* 2010;340:c1971. (13 April.)
2 National Institute for Health and Clinical Excellence. Chest pain of recent onset: assessment and diagnosis of recent onset chest pain or discomfort of suspected cardiac origin. www.nice.org.uk/cg95.
3 Underwood SR, Goodman B, Salyani S, Ogle JR, Ell PJ. Economics of myocardial perfusion imaging in Europe—the EMPIRE study. *Eur Heart J* 1999;20:157-66.
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5 National Institute for Health and Clinical Excellence. Coronary imaging: myocardial perfusion scintigraphy for the diagnosis and management of angina and myocardial infarction. www.nice.org.uk/ta073.

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NICE replies

Bourdillon is correct that the recent guideline from the National Institute for Health and Clinical Excellence (NICE) on the assessment and diagnosis of recent onset chest pain does not recommend exercise electrocardiography (ECG) for diagnosing stable angina.[1] The full version of the clinical guideline clearly summarises that other testing strategies have better diagnostic accuracy and are more cost effective. Bourdillon shows that among some patients exercise ECG will correctly identify coronary artery disease, but he does not compare the guideline's full strategy with continuing use of exercise ECG.

He reports that exercise ECG would have changed the management of about a third of patients attending a rapid access chest pain clinic. However, the calculations seem to apply to all-comers, whereas NICE's recommendation is no testing in patients with non-anginal pain and patients with probabilities of coronary artery disease >90% or <10%. This excludes about 46% of all patients from testing. Among those for whom diagnostic testing is recommended, Bourdillon's attempt to amplify diagnostic value through consideration of the degree of ST depression merely buys specificity at the expense of sensitivity, increasing false negative diagnoses and further diminishing diagnostic value in patients with a low pre-test probability of disease.

With reference to the letter by Underwood,[2] the chest pain guideline was specifically on the assessment and diagnosis of patients with recent onset chest pain/discomfort that may be of cardiac origin. It did not consider the role of exercise ECG in assessing prognosis among people with an established diagnosis of coronary artery disease, which will be considered in the forthcoming guideline on stable angina. Although the chest pain clinical guideline did not cover costs or implementation, these issues are the focus of considerable ongoing work by NICE.[3]

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1 Bourdillon P. Exercise ECG useful in finding coronary artery disease. *BMJ* 2010;340:c1971. (13 April.)
2 Underwood SR. W(h)ither the exercise ECG. *BMJ* 2010;340:c2387.
3 National Institute for Health and Clinical Excellence. Chest pain of recent onset: assessment and diagnosis of recent onset chest pain or discomfort of suspected cardiac origin. Implementing this guidance. www.nice.org.uk/cg95.

Cite this as: *BMJ* 2010;340:c2391

NICE ON UNSTABLE ANGINA

Dangers in the guidance

Guidance from the National Institute for Health and Clinical Excellence (NICE) on unstable angina and non-ST segment elevation myocardial infarction raises important clinical concerns.[1]

Mandating a risk score in patients is laudable, but use of the GRACE calculator produces perverse decision making because it is so dependent on age. For example, a 49 year old man presenting with marked ST segment depression and a significantly raised troponin concentration but normal pulse and blood pressure would be managed conservatively according to NICE guidance. In contrast, almost everyone over the age of 60 with no electrocardiographic changes and normal troponin values would merit routine coronary angiography. Patients presenting with non-cardiac chest pain over the age of 60 are at risk of having inappropriate coronary angiography with its associated risk and cost.

The use of powerful antithrombin treatments in the new guidance may be evidence based and valid, but many patients present to the acute medical take not with a firm diagnosis of an acute coronary syndrome but diagnostic uncertainty. Exposing such patients to these agents is not without risk.

The move from unfractionated intravenous heparin to subcutaneous low molecular

weight heparins was a major advance in safety in managing patients with acute coronary syndromes. The guidance suggests a move back to complex intravenous regimens, with all the problems of monitoring and dose adjustment in overstretched accident and emergency departments and emergency admissions units. This produces scope for significant risk.

Aspects of this guidance are likely to result in harm to patients. A clinical debate is required before it is accepted as routine clinical practice.

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Competing interests: None declared.

1 Crowe E, Lovibond K, Gray H, Henderson R, Krause T, Camm J, on behalf of the Guideline Development Group. Early management of unstable angina and non-ST segment elevation myocardial infarction: summary of NICE guidance. *BMJ* 2010;340:c1134. (24 March.)

Cite this as: *BMJ* 2010;340:c2395

EYES AND DETERGENT CAPSULES

Do not assume strong alkalinity

The cleaning products industry takes concerns about its products seriously and fully supports Mathew and colleagues' call for greater consumer awareness in their letter about paediatric eye injuries from exposure to liquid detergent capsules.[1] Parents also have an important role in following guidance for the safe use of detergent products, including safe storage at all times.

Liquid detergent sachets have been on the market for nearly 10 years. During this time an estimated 6 billion have been used, and currently 850 million are used yearly in the UK.

Manufacturers have made labelling more prominent, labels clearly stating:

- Keep out of reach of children
- Avoid contact with eyes
- In the event of contact with eyes immediately rinse with plenty of water.

However, Mathew and colleagues incorrectly state that the contents of the capsule are "dissolved in water to give an alkaline solution, making the capsule more dangerous than initially perceived."[1] Strong alkalinity and its damage to eyes is accepted, but medical practitioners should not automatically assume strong alkalinity with liquid detergent capsules. In fact, they have a pH of 8—that is, are essentially neutral—and cause no irreversible effect.

Mathew and colleagues cite 13 eye injuries, 12 of which "resolved with no complications"; the 13th child did not have irrigation until arrival at hospital but recovery even in this case should have been complete. This is consistent with our assessment that any such eye incidents are fully recoverable.

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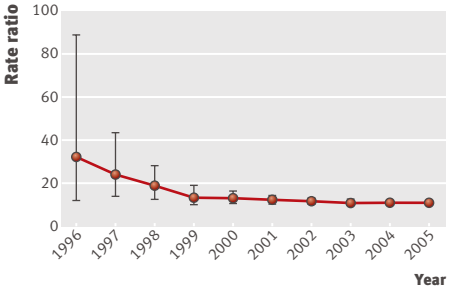
Competing interests: None declared.

1 Mathew RG, Kennedy K, Corbett MC. Wave of paediatric eye injuries from liquid detergent capsules. *BMJ* 2010;340:c1186. (2 March.)

Cite this as: *BMJ* 2010;340:c2399

IMPROVING PHARMACOVIGILANCE

Use of routinely collected data



Relative risk of myopathy and myalgia by year in case-crossover analysis of 16 591 patients using statins or fibrates during 1991-2005.[3] Error bars are 95% confidence intervals

Initiatives to improve pharmacovigilance in Europe[1] are essential in improving the safety of health care because current approaches to detecting adverse drug reactions have major limitations.

Databases derived from electronic patient records and hospital administration systems could help to improve detection.[2] We used one primary care database to investigate the association of myopathy and myalgia with the use of statins and fibrates.[3] This case crossover design (in which each patient acts as his or her own control) could have detected the association as early as 1996 (figure).

Hospital episode statistics can identify admissions for adverse drug reactions. For example, during 1998-2005 the total number of hospital episodes in England increased by 14% but the number associated with adverse drug reactions increased by 45%.[4] The increase in admissions associated with adverse drug reactions may have been due to improved record keeping, a rise in adverse reactions because of an increasingly elderly population, the introduction of new drugs, and polypharmacotherapy. More effective use of hospital episode statistics, and of similar systems elsewhere in Europe, could considerably improve surveillance, as well as allowing evaluation of interventions to improve the safety of prescribing.

Health systems throughout Europe are investing substantially in information technology, which could improve pharmacovigilance.[5] Coverage of larger populations than allowed by studies in a single country and using a single database increases study power, with the potential benefit of earlier and more effective detection of adverse drug reactions.

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Competing interests: MM is funded by an NIHR postdoctoral award and is an investigator for the EU-ADR FP7 and Serious Adverse Events Consortium (SAEC) projects on adverse drug reactions. The Department of Primary Care and Public Health at Imperial College London has support from the NIHR Biomedical Research Centre scheme and the NIHR collaboration for leadership in applied health research and care (CLAHRC) scheme.

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3 Molokhia M, Curcin V, McKeigue P, Majeed A. Statin induced myopathy and myalgia: time trend analysis and comparison of risk associated with statin class from 1991-2006. *PLoS One* 2008;25;3(6):e2522.
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5 Avillach P, Mougin F, Joubert M, Thiessard F, Pariente A, Dufour JC, et al. A semantic approach for the homogeneous identification of events in eight patient databases: a contribution to the European EU-ADR project. *Stud Health Technol Inform* 2009;150:190-4.

Cite this as: *BMJ* 2010;340:c2403

SHAKEN BABY SYNDROME

Report of pathologists' meeting

The Royal College of Pathologists is aware of major differences of opinion between different pathologists in interpreting postmortem findings in cases of suspected non-accidental injury in children (so called shaken baby syndrome). For this reason it organised a meeting on this subject in December 2009, which the pathologists mentioned by Dyer attended.[1] The report of the meeting, setting out areas of agreement and disagreement, with the text agreed by all who attended the meeting, is available on the royal college's website (www.rcpath.org).

One of the report's main conclusions is to highlight the need for more research in this area. However, since 2006, under the Human Tissue Act 2004, any research that uses the postmortem tissues of a child has been unlawful unless a parent gives consent for it. In the current context, this often means obtaining the consent of a person who has been charged with (or convicted of) killing the child in question. The Department of Health has been informed of the obvious difficulty that this causes but has declined to take any action.

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Competing interests: None declared.

1 Dyer C. Doctors in shaken baby syndrome case are accused of "scientific prejudice." *BMJ* 2010;340:c1989. (13 April.)

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