Reviewer's report

Title: Procalcitonin-guided antibiotic use versus a standard approach for acute respiratory tract infections in primary care: study protocol for a randomised controlled trial and baseline characteristics of participating general practitioners [ISRCTN73182671]

Version: Date: 21 June 2005

Reviewer: Chris Del Mar

Reviewer's report:

BMC Briel et al
Procalcitonin-guided antibiotic use … for ARTIs...

This is a report of a trial design that is now currently running and about to finish, in Switzerland. It is very heavily based on a trial published in the Lancet in 2004 by the same authors which looked at the same question, but based on (the more severe) admissions to hospital with suspected lower respiratory infections. This trial in contrast is being applied to primary care upper respiratory infections. But the anticipation was the same: to demonstrate that the use of Procalcitonin as a diagnostic marker of bacterial infection (it appears to respond to cytokines by increasing levels dramatically within the first 12 hours or so) results in a decrease in antibiotic prescribing with no drop off in infection resolution (as measured by several proxy measures, the prime of which is days off incapacitated).

What is really innovative in this study is the notion that diagnosis is not the principle outcome measure in the traditional diagnostic test evaluation. It would be expected that we would see a gold standard diagnostic test (I imagined this would be an ASOT titre, since Streptococcal disease is the primary problem in ARI infective agent detection). But instead this study looks directly at patient outcomes, assuming that if the patient recovered then there was no serious illness. (One view is that 'diagnosis' is just a proxy for prognosis, or prognosis with a specific treatment).

Major Compulsory Revisions (that the author must respond to before a decision on publication can be reached)

None

Minor Essential Revisions (such as missing labels on figures, or the wrong use of a term, which the author can be trusted to correct)

None detected

Discretionary Revisions (which the author can choose to ignore)

1 Do patients provide consent? I would have thought this is mandatory, but I think will be problem because GPs hate obtaining consent from patients during a clinic, and in this case the benefits for the patient may not be obvious (having antibiotics withheld is not hugely attractive), and they have to undergo two extra visits, and to provide blood (otherwise not normal I imagine) on two occasions.

2 How long will it take to communicate the results to the GP? I am not clear how this is operating: will the GP take a blood sample, and then defer the decision of the antibiotic until the result is conveyed back from the lab (presumably the next day—or any rate until after the patient has left?), and then
the antibiotic prescribed? Perhaps a ‘delayed’ prescription will be used?
3 It is a pity that patients for whom antibiotics are not contemplated are not included. As a GP I am often aware of ‘missing’ a serious infection when I wished I had prescribed them. So it would be interesting to know how often a doctor was prompted to use antibiotics because of an unexpected high PCT. This would be all part of getting the right drug to the right patient.
4 I am worried that the PCT Was designed for ‘severe sepsis or bacterial infection’ (see BRAHMS website). This may be rare in primary care, even though there is evidence of benefit for many bacterial ARI infections, even if modest.
5 Two references citations incorrectly present my name as ‘Mar’ rather than ‘Del Mar’

Which journal?: Not appropriate for BMC Medicine: an article of only archival interest, but might be suited to BMC Family Practice

What next?: Offer publication in BMC Family Practice after discretionary revisions

Quality of written English: Acceptable

Statistical review: No

Declaration of competing interests:
I declare I have no competing interests.