LETTERS

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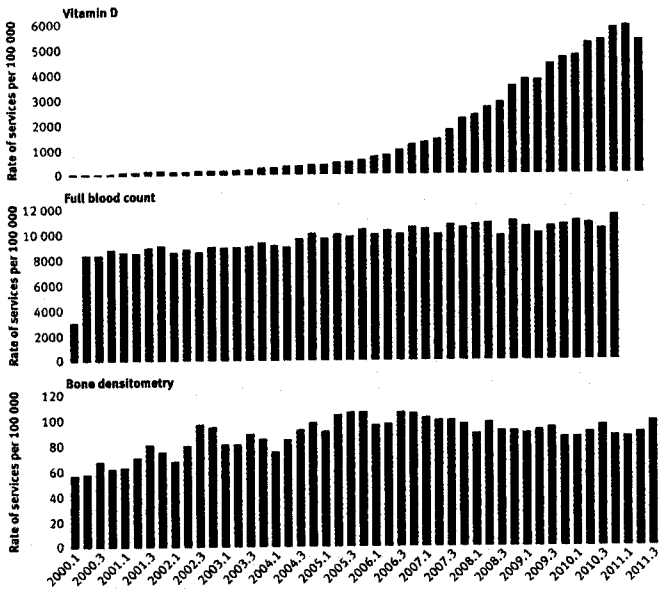
PREVENTING OVERDIAGNOSIS

The rise and rise of vitamin D testing

Moynihan and colleagues' report highlights the increasing trend for overdiagnosis, particularly of endocrine disorders.[1]

Similar concerns exist for overdiagnosis and overtreatment of vitamin D deficiency.[2 3] Currently, the appropriate timing and frequency of testing for the diagnosis of vitamin D deficiency is unclear. The cost of testing in Australia increased from $A1m (£0.66m; €0.83m; $1m) in 2000 to $95.6m in 2010, on average 59% each year.[2] Similarly, in Ontario, Canada, testing increased 25-fold from 2004 to 2010. Projections suggest that $C150m (£95m; €120m; $147m) will be spent on vitamin D testing in 2012, up from $38m in 2009.[4] Similarly, the UK has seen a sixfold increase in such tests between 2007 and 2010.[5]



Requests per 100 000 for vitamin D, full blood count, and bone densitometry between 2000 and 2011

Our data show that the past 11 years have seen an unsustainable growth in vitamin D testing in Australia (figure). These findings have widespread consequences in terms of quality of care, unnecessary cost, and potential overdiagnosis. Further studies are needed to determine whether this increased testing translates into improved vitamin D status in the population and subsequent health outcomes. Worryingly, however, this large increase in vitamin D testing did not translate into increased testing for osteoporosis, as shown by the flat trend in bone density measurements (figure).

Guidelines are urgently needed to limit overtesting, overdiagnosis, and as a consequence overtreatment for vitamin D deficiency.

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Competing interests: None declared.

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POST-MARKETING STUDIES

Contributions to medical knowledge can be important

My experience in collaborating with various drug companies in the design, execution, analysis, and publication of post-marketing surveillance (PMS) studies differs greatly from that described in your recent article.[1] The general consensus was that PMS studies serve a scientific purpose. Studies typically had predefined scientific questions and were powered to answer them. Some studies had been recommended by the regulatory authorities, such as ones investigating tolerability in high risk subpopulations,[2] underlying pathophysiology of disease,[3] and disease assessment tools.[4]

Properly designed PMS studies are not scientifically inferior to randomised controlled trials—they just serve a different purpose. Being closer to real life, they often reflect a broader spectrum of patients, and because per patient costs are lower, can often recruit larger numbers of patients than would be possible in trials. Their main disadvantage is the lack of a control group, but that can be partly overcome.[5] This results in lower internal validity but greater external validity than with trials. Although they cannot be used to make claims about the absolute efficacy of a given treatment, the often large numbers of patients can allow the analysis of subpopulations or the application of multiple regression models to analyse potentially related variables with adequate statistical power.

I do not claim that in the past PMS studies have not been used as marketing tools disguised by poor science. Investigators, drug companies, and journal editors are all responsible for ensuring that only PMS studies with relevant scientific questions and methods are performed and published. Such PMS studies can make important contributions to medical knowledge.

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Competing interests: In the past five years MCM has received research support, consultancy, and lecturer honorariums from Allergan, AltheRX, Astellas, Bayer, Boehringer Ingelheim, Eli Lilly, and Pfizer. In 2011 he became an employee of Boehringer Ingelheim. This letter does not necessarily reflect the views of his employer.

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