Mild renal dysfunction associated with incident coronary artery disease in young males (from MELANY Study Investigators)

I read the research report from Pereg et al. in the related issue of European Heart Journal. Some wrong statements changing the meaning of the results of the study drew my attention at the third paragraph on page 201.

(1) They have stated ‘Of note, 31 subjects with CAD were in the fifth quintile (Table 2).’

According to my opinion, true statement concordant with Table 2 should be such as ‘Of note, 31 subjects with CAD were in the fifth quintile (Table 2).’

(2) They have also stated ‘When an age adjustment analysis was performed, we observed a significant and progressive increase in the risk of CAD as the estimated creatinine clearance decreased, and the risk for CAD was found to be significantly higher in the fifth compared with the first quintile (HR = 4.77, 95% confidence interval 3.22–7.06, P < 0.001) (Table 2).’

According to my opinion, true statement concordant with Table 2 should be such as ‘When an age adjustment analysis was performed, we observed a significant and progressive increase in the risk of CAD as the estimated creatinine clearance decreased, and the risk for CAD was found to be significantly higher in the fifth compared with the first quintile (HR = 4.77, 95% confidence interval 3.22–7.06, P < 0.001) (Table 2).’

(3) Their another statement is ‘In a multivariable model, adjusted for family history of CAD, blood pressure, cholesterol values, and smoking status, the inverse association between estimated creatinine clearance and the risk for CAD remained, and the increased risk for CAD in the fifth compared with the first quintile persisted (HR = 2.69, 95% confidence interval 1.19–5.72, P < 0.001) (Table 2).’

According to my opinion, true statement concordant with Table 2 should be such as ‘In a multivariable model, adjusted for family history of CAD, blood pressure, cholesterol values, and smoking status, the inverse association between estimated creatinine clearance and the risk for CAD remained, and the increased risk for CAD in the first compared with the fifth quintile persisted (HR = 2.69, 95% confidence interval 1.19–5.72, P < 0.001) (Table 2).’

I think that they have confused or overlooked the results of first and fifth groups.

Reference
I read with interest the review by Schroeder et al.1 that summarizes the present state of cardiac computed tomography technology. However, the long list of ‘appropriate clinical indications’ for the use of multi-detector computed tomography (MDCT) reflected in Table 3 under the subheading ‘Clinical implications and recommendations’ is misleading. In the text part, the authors confirm that a superior effectiveness of MDCT compared with other modalities for diagnosing congenital or structural anomalies of the heart has not been demonstrated. However, as far as the detection of coronary artery disease (CAD) is concerned, the evidence supporting the use of MDCT is also low.2

The diagnostic accuracy of MDCT in CAD has thoroughly been tested predominantly in patients who do not need it, i.e. in those at high risk in whom it had already been decided to proceed to conventional coronary angiography (CCA). In these populations, diagnostic performance of the test, at least its negative predictive value, is good.3 It should not be taken for granted that these favourable results apply to unselected or lower risk populations as well.4

Most trials have been focusing on the accuracy of MDCT in imaging coronary arteries, but that is not what our patients are asking for. What they want is their symptoms to be alleviated or their survival to be improved. From a societal perspective, these goals should be achieved at a reasonable cost. The review by Schroeder et al. mentions two studies of cost-effectiveness. Only that by Goldstein et al.5 looks at clinical outcomes and the results are bewildering, though not appreciated as such by Schroeder et al.1 This trial enrolled 197 patients with chest pain, admitted to the emergency department and estimated at low risk for serious future events. Ninety-nine patients were randomized to further testing with MDCT and 98 with myocardial perfusion scintigraphy (MPS). If MDCT or MPS indicated severe CAD, the patient was sent for CCA. If MDCT was inconclusive, patients were sent for MPS and subsequently for CCA if deemed necessary. Patients initially referred to MDCT underwent 30% more radiotracers than those randomized to MPS, and had an increase in revascularizations without any effect on 6 month outcomes, incorporating death, acute coronary syndrome, re-admissions, or late office visits. MDCT in this trial lowered costs, as far as the decision to the need of CCA was concerned. Downstream cost-effectiveness data related to the increased number of revascularizations and unaltered patient outcomes were not accounted for.

The recommendations formulated in this review are inappropriate because they lack robust scientific foundation. Paraphrasing Shaughnessy and Slawson,6 this is mere PROSE, i.e. Prescriptive Recommendations, based on Substandard Evidence.

References

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Recommendations or mere prose?: reply

Thank you for providing us with the opportunity to reply to the correspondence sent in by Dr Van Brabant concerning our recent article on cardiac computed tomography (CT).1 Although he raises interesting points, they should not go without comment.

Dr Van Brabant states that the high negative predictive value of coronary CT angiography was found in studies with a high prevalence of disease and will not hold up if the test is applied to patients with a lower pre-test likelihood. We respectfully disagree with this statement. In fact, as an effect of Bayesian statistics, negative predictive value will increase as the prevalence of disease decreases.2 This effect works in favour of coronary CT angiography since clinically; it will usually be applied to lower risk populations.3

Dr Van Brabant criticizes that CT angiography has often been tested in populations which ‘...do not need it...’. The underlying reason is that evaluation requires comparison with the standard of reference, in this case invasive angiography, and therefore studies had to be performed in populations which already had been scheduled for angiography.

As to the author’s criticism of Goldstein’s cost-effectiveness analyses,4 we are not in a position to reply to critique of other authors’ work, but even though not in agreement with the harsh critique voiced here, we do share the opinion that more evidence particularly concerning implications and cost-effectiveness of coronary CT angiographyin specific clinical situations, especially in relation to other techniques (MR, Echotocardiography, SPECT, PET), would be tremendously helpful.

References

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