LETTERS TO THE EDITOR

Nasal oxygen during endoscopy

EDITOR,—Recently, the possible value of nasal oxygen in endoscopic retrograde cholangiopancreatography was studied by Haines and colleagues (Gut 1992; 33: 973-5). They found, not unexpectedly, that arterial oxygen saturation was not increased during oxygen treatment, but the effect of oxygen treatment on heart rate was not significant.1 They concluded, on the basis of the measured values for arterial oxygen saturation that nasal oxygen should be routinely used in patients over the age of 60 undergoing endoscopic retrograde cholangiopancreatography (ERCP),2 thus supporting the guidelines published by the British Society of Gastroenterology.3 These recommendations, however, were made because of previous reports of hypoxaemia during endoscopy, which were not based on prospective studies relating hypoxaemia to clinical outcome. Such large scale prospective studies have not yet been published.

Instead, we may look at studies relating arterial hypoxaemia during endoscopy to the development of myocardial ischaemia and infarction. There are no data available on the association of hypoxaemia and myocardial infarction, and only two studies have focused on arterial hypoxaemia and associated myocardial ischaemia during upper gastrointestinal endoscopy.4,5 Murray and colleagues found significant ST depression on ECG in five patients during EGD with only one patient having simultaneous oxygen saturation of less than 90%.4 We found, studying 15 patients undergoing ERCP, that significant ST depression occurred in 10 of 15 (67%) patients during ERCP. Coherent ischaemia and episodic hypoxaemia was found in five patients, isolated ischaemia in seven patients, and isolated episodic hypoxaemia in three patients. Coherent ischaemia and a tachycardia was found in 10 patients, ischaemia without a tachycardia in no patients, and an isolated tachycardia in one patient.5 These results suggest tachycardia is more important than hypoxaemia in the pathogenesis of myocardial ischaemia during upper gastrointestinal endoscopy. Making pulse oximetry or oxygen treatment part of the standards of care guarantees that the experiments necessary to document its efficacy will never be carried out because we have ruled out a control group, and efficacy cannot be measured in terms of frequency of oxygen desaturation, but only in clinical outcome. Thus, the role of hypoxaemia to precipitate cardiac or other complications remains to be shown. In Denmark, clinical recommendations for monitoring and oxygen treatment during endoscopy have not been issued, as it seems premature considering the lack of scientific data in support.


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EDITOR,—We note the above comments of Dr Rosenberg with interest. We would entirely agree that the success of any recommendation to improve the safety of gastrointestinal endoscopy must ultimately be judged by the criterion of clinical outcome. As we are dealing with (fortunately rare) major adverse clinical outcomes (for example myocardial infarction, respiratory arrest or death), we agree that very large scale prospective studies are required for definitive proof. In the absence of such studies, we must draw conclusions from the limited data available and make appropriate recommendations to ensure that our current practice is as free of avoidable risks as we can.

On current evidence, it seems reasonable to assume that occurrence of both arterial hypoxaemia and myocardial ischaemia (as evidenced by ST segment depression) may identify a subgroup of patients particularly at risk of a significant adverse outcome. It is not possible to be certain whether these independent risk factors in an individual, or whether they are additive. It is possible to be certain that one of them, arterial hypoxaemia, is to a large extent preventable by a simple (and cheap) modification to current practice. We therefore entirely stand by the recommendations of the British Society of Gastroenterology but agree that there is no cause for complacency. We would agree with Dr Rosenberg that the occurrence of significant tachycardia in our own series of patients is worrying and that the reduction of this additional risk factor to enhance patient safety is clearly needed.

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