The link between type 2 diabetes and pancreatic adenocarcinoma is yet to be established

We note with concern the suggestion of causation in the retrospective case–control study by Bosetti et al. [1], where they report a causal link between type 2 diabetes and pancreatic adenocarcinoma.

We are concerned of the validity of such a statement, based on methodological discrepancies and the lack of details concerning how controls were selected in their paper. Having visited the website of the Pancreatic Cancer Case Control Consortium (http://panc4.org/) whose patient data were analysed in this study, there is no additional information on the patient characteristics or patient selection criteria of the cases or control group.

There are several concerning confounding variables in this study. The authors note that the group of pancreatic cases were older than controls. It may be that patients have had longer to potentially develop their destined pancreatic cancer and/or diabetes in the cases group and if the control group was more mature they would have equally developed the same number of cases. We know from other studies that lower social class is an important variable with respect to an increased prevalence of diabetes [1]. There appears to have been no account taken of this. Patients with hereditary pancreatitis have an estimated lifetime risk of 40% for developing pancreatic cancer [2]. Of concern, the cases arm had a higher frequency of reported history of pancreatitis compared with controls. In addition, obesity was also higher in the cases group compared with the control arm. This may explain in part why there is a higher reported diagnosis of type 2 diabetes in the cases arm and obesity itself is a risk factor for pancreatitis [3]. In two prospective cohort studies [4], obesity significantly increased the risk of pancreatic cancer and it maybe this or another factor which may cause both diabetes and pancreatic cancer rather than one causing the other. Some of the imbalances between the groups appear to have been compensated for, but it is difficult to determine whether that this has been done adequately.

The conclusion that there is any causation between type 2 diabetes and pancreatic adenocarcinoma is not justified. This study can only accurately conclude that control patients in this study had a lower prevalence of diabetes than those with cancer. At best, this study is hypothesis generating and the appropriate way to address the question of causation is with a prospective study adequately controlled for confounding variables.

Currently, there is no indication for screening patients with type 2 diabetes for pancreatic cancer on the basis of these data as the absolute risk of pancreatic cancer is very low and the conclusions from these data of a causal link are not supported.

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disclosure

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references


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Reply to the letter to the editor ‘The link between type 2 diabetes and pancreatic adenocarcinoma is yet to be established’ by Rahman and Meeran

Rahman and Meeran [1] comment on our paper on type 2 diabetes mellitus and pancreatic cancer risk. They specifically raise the issue of the use of the term ‘cause’ in our report summary. Our conclusion was that the data ‘support a causal role of diabetes in pancreatic cancer’ in the sense that it is indeed a confirmed risk factor; we do not state it is a ‘causal link’ as they infer. A finding of association does not prove causality, and we did not state our data were such proof. In any case, many epidemiological findings over the past several decades on now-