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Comment

—to: Borch-Johnsen K, Colagiuri S, Balkau B et al. (2004) Creating a pandemic of prediabetes: the proposed new diagnostic criteria for impaired fasting glycaemia. Diabetologia 47:1396–1402

To the Editor: We read with interest the paper by Borch-Johnsen and co-workers [1] on the impact of lowering the threshold for the diagnosis of IFG from 6.1 to 5.6 mmol/l, as recently proposed by the American Diabetes Association (ADA) expert committee on the diagnosis and classification of diabetes [2]. The authors point out a number of issues that need to be clarified, and we fully agree with their view that there is a need for extensive and thorough analysis of existing data in order to provide as much evidence as possible before proposing new criteria. This prompted us to re-analyse data from a survey conducted in Italy of employees of the Italian Telephone Company [3]. Improving concordance between the IFG and the IGT category, thus improving the predictive power of IFG for development of diabetes, was one of the reasons for proposing a lower threshold for the diagnosis of IFG [2]. However, little information is available on the progression to diabetes in the new IFG category [4]. The present analysis was undertaken to evaluate the concordance of the diagnosis of IFG—as defined by the new criterion—and IGT, and to evaluate the risk of progression to diabetes in the new IFG category.

Between 1979 and 1980, all employees of the Italian telephone company of the province of Naples within the age range 40–59 years (n=1145) were screened using an OGTT with a 75-g loading dose of glucose, which was performed according to World Health Organization (WHO) guidelines. Individuals who had previously been diagnosed with diabetes were excluded from the study. This report presents data on a subset of 560 individuals (49% of the original cohort) who were re-examined between 1990 and 1991, i.e. 11.5 years after baseline. At baseline, fasting and 2-h post-load glucose levels were measured in venous whole blood, and the WHO conversion tables were used to convert the results into plasma glucose equivalents [5]. At follow-up, biochemical measurements included fasting plasma glucose, and use of medication was recorded. Diabetes at follow-up was defined as a fasting plasma glucose concentration of ≥7 mmol/l or treatment for diabetes.

According to the proposed ADA 2003 criterion, 55 participants (9.8%) had IFG, and 23 (42.0%) of these also had IGT, whereas according to the WHO 1999 criterion (fasting plasma glucose 6.1–6.9 mmol/l), 20 individuals had IFG, nine (45.0%) of whom also had IGT. Therefore, by using the new criterion for IFG, the prevalence of this condition increased by 175%, but the concordance between IFG and IGT remained low. As regards progression to diabetes, of the 55 participants with IFG according to the ADA 2003 definition, 21 (38.2%) developed diabetes in 11.5 years compared with 6.9% of the participants with normoglycaemia (odds ratio 3.1, 95% CI 1.5–6.3). This significant increase in risk was largely driven by the group with coexistent IGT, whereas for the group with isolated IFG the risk of progression to diabetes was not significantly different to that for the group with normoglycaemia (6.9% vs 12.5% respectively) (Table 1).

We are aware that some caution is needed in the interpretation of the data. Firstly, the follow-up rate was low, and those lost to follow-up were older and therefore more likely to develop diabetes than those who were re-examined. However, this limitation applies to both the IFG and IGT groups. Secondly, an OGTT was not performed at the follow-up examination; however, results based on fasting glucose are still relevant, as this is currently the recommended definition for diabetes in the clinical setting. Finally, the small study population did not allow us to perform analyses of subjects stratified according to age, sex or BMI, thus leaving unexplored the interaction of factors with the new definition of IFG in the prediction of diabetes.

Despite the limitations associated with this study, these conclusion are relevant in that they confirm the results reported by Borch-Johnsen and colleagues in different populations. Furthermore, they expand current knowledge on this subject, indicating that by lowering the threshold for IFG, a larger pro-

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Table 1. Risk of progression to diabetes in people with impaired glucose regulation defined according to the ADA 2003 criteria

Status	Subjects (n)	Progression to diabetes (%)	Odds ratio (95% CI) versus normoglycaemia
Normoglycaemia	479	6.9	–
Isolated IFG	32	12.5	1.9 (0.6–5.8)
IFG and IGT	23	34.8	7.2 (2.8–18.2)
Isolated IGT	26	34.6	7.1 (2.9–17.3)

portion of the population, similar to that with IGT, is identified. However, IFG and IGT still identify substantially different sections of the population at different risk for future diabetes. These results support the view that diagnostic criteria should not change until evidence is available on the impact of preventive measures on the new diagnostic category of IFG.

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Abbreviations: ADA, American Diabetes Association · WHO, World Health Organization