

LOSS OF GLYCEMIC CONTROL ASSESSED BY THE 5-YEARS FOLLOW-UP TO THE PORTUGUESE STUDY ON THE PREVALENCE OF DIABETES (PREVADIAB)

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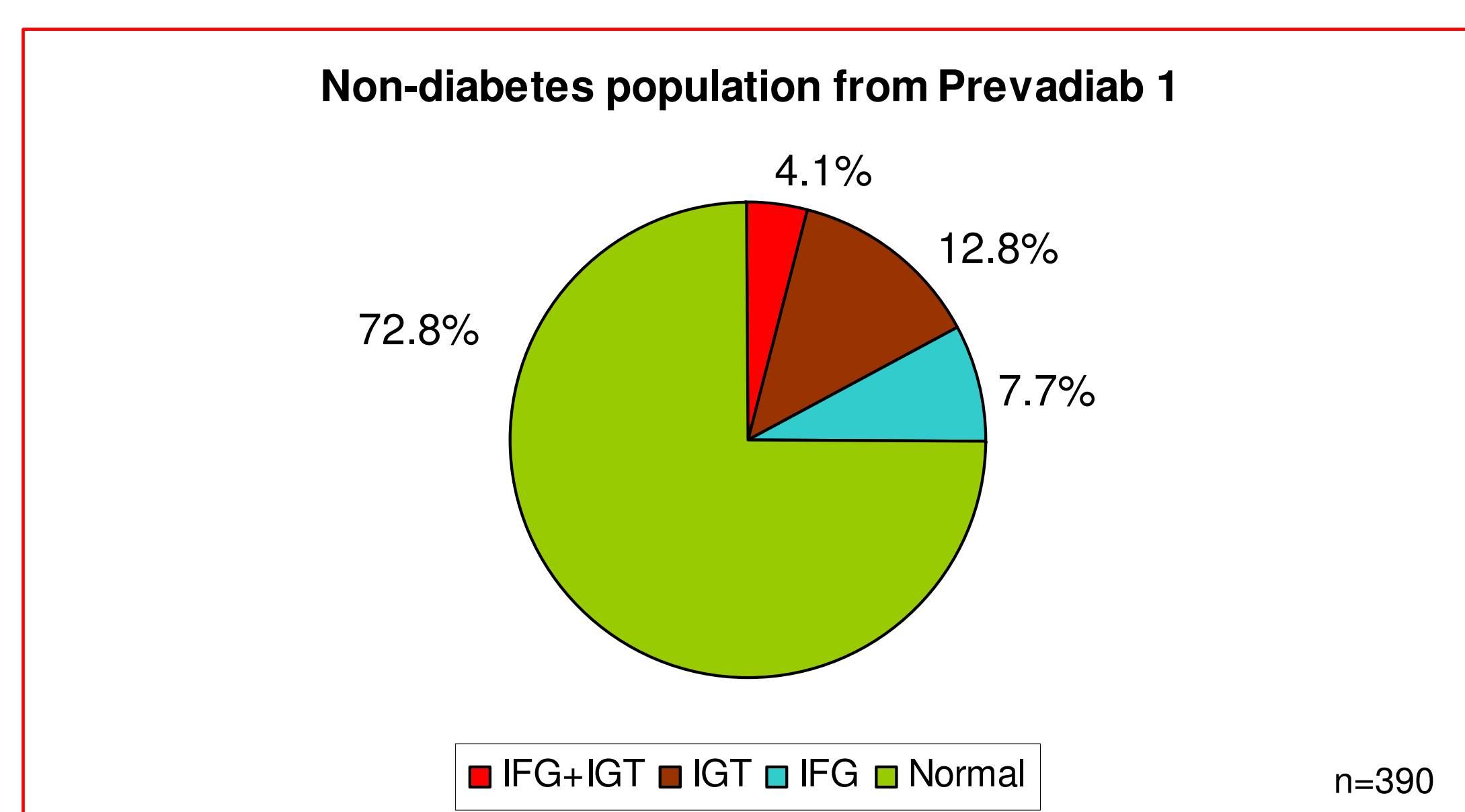


BACKGROUND

- The first Portuguese nationwide study on the prevalence of diabetes (Prevadiab 1, n=5167) showed that 11,7% of the cohort population had diabetes, while nearly 25% already showed “prediabetes” [1];
- A sub-population of this study was selected for a 5-years follow-up study.
- The Finnish Diabetes Risk Score (FINDRISC) was developed and validated as a screening tool to assess risk of development of diabetes [2]. This includes information about age, BMI, waist, physical activity, nutritional habits, medication, and family history.

RESULTS (1)

Development of Glycemic Status: Follow-up study



5 Years

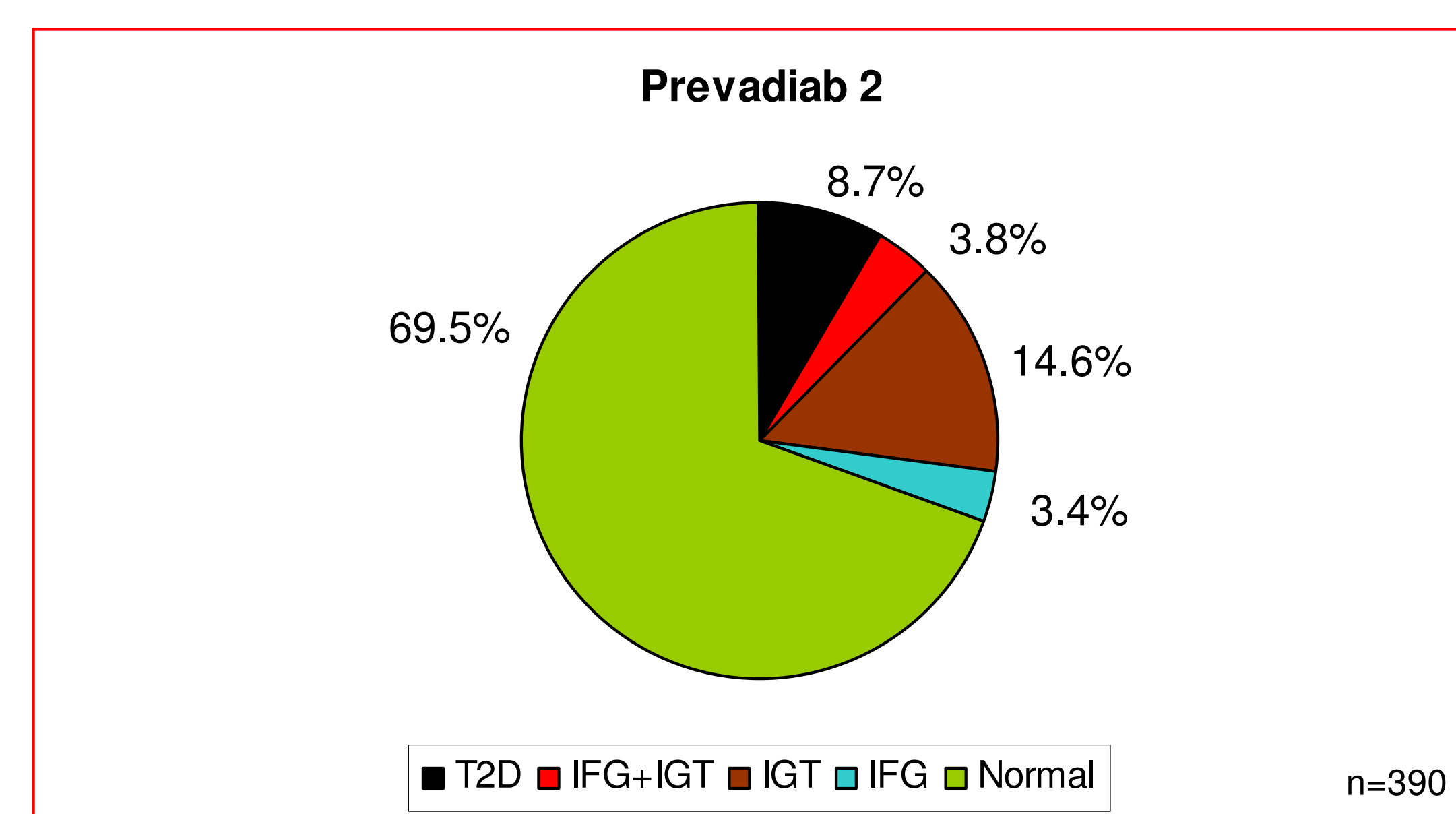


Figure 1 – Incidence of glycemic control status on the same individuals from the original study (Prevadiab 1) to the 5 years follow-up (Prevadiab 2). The prevalence of diabetes on the follow-up was 8,7%; while IFG was 3,4%, IGT 14,6%, and IFG+IGT 3,8%, to a cumulative impact of prediabetes of 21,8%. IFG: Impaired fasting glycemia, IGT: impaired glucose tolerance, IFG+IGT: individuals with both impairments, T2D: type 2 diabetes.

RESULTS (2)

5-years Progressors to Type 2 Diabetes

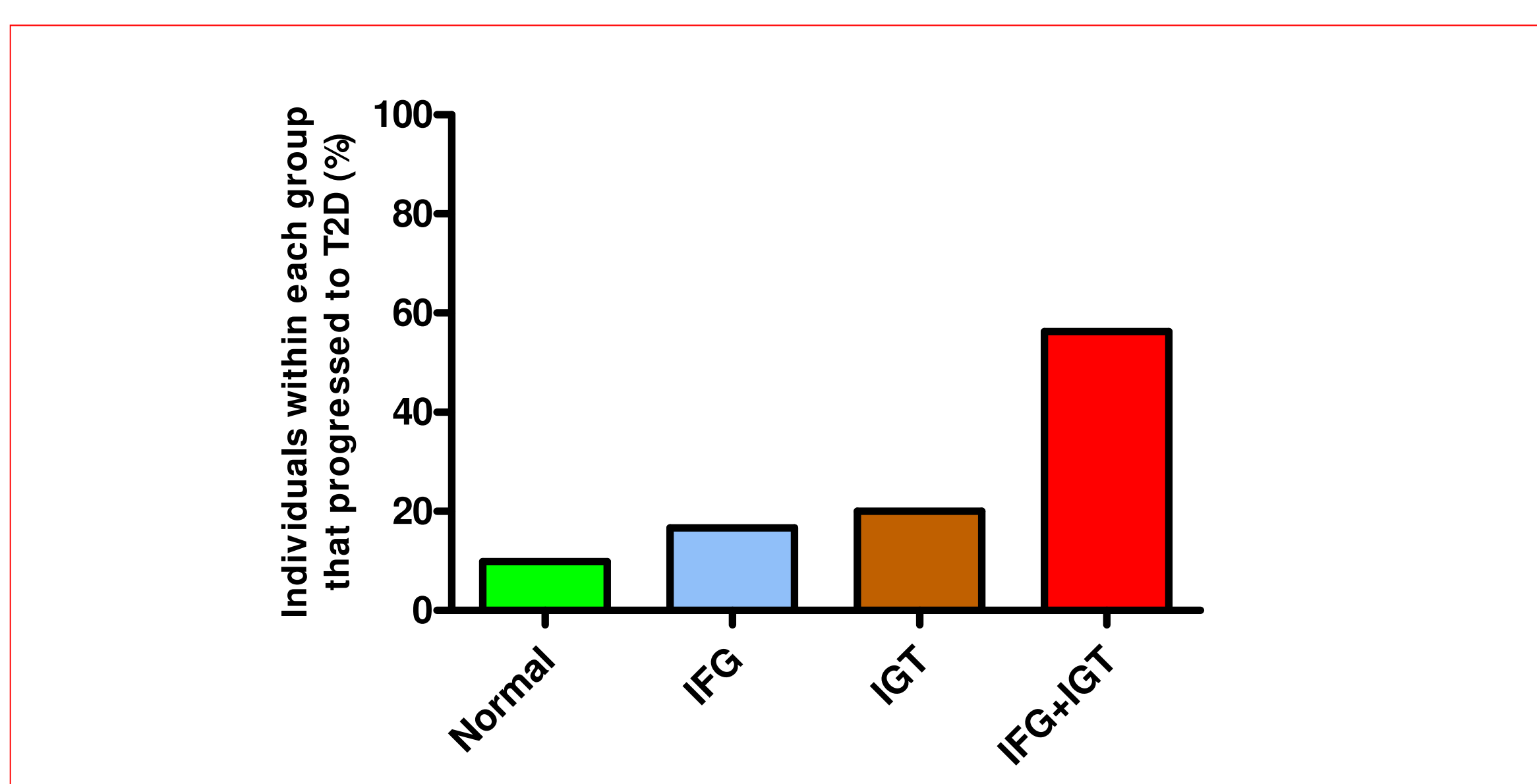


Figure 2 – Individuals either labelled as normal or with prediabetes (IFG, IGT, or both impairments) on the Prevadiab 1 that progressed to diabetes by the Prevadiab 2. This represented 9.9% of normals, 16.7% of IFG, 20.0% of IGT, and 56.3% of IFG+IGT.

RESULTS (3)

Population characteristics by glycemic control group in Prevadiab 2

	Age (years)	BMI (kg/m ²)	Waist (cm)	Systolic (mmHg)	Diastolic (mmHg)	Cholesterol (mg/dl)	HDL (mg/dl)	LDL (mg/dl)	TG (mg/dl)	I0 (μUI/ml)	I120 (μUI/m)	HbA1c (%)
Normal (n=271)	62.3±1.5	27.9±0.9	95.1±1.7	145.8±3.6	85.2±1.7	195.8±5.5	56.7±3.0	127.0±7.5	107.6±14.3	6.9±1.0	36.2±3.2	5.5±0.2
IFG (n=13)	61.3±5.8	28.3±1.5	97.1±3.9	164.5±10.1	89.5±4.9	198.7±11.0	48.2±3.4	136.2±8.0	140.0±15.9	11.4±2.3	56.3±12.5	6.0±0.1***
IGT (n=57)	65.3±3.1	29.3±1.1	96.1±1.5	154.8±5.0	89.5±2.5	204.1±5.1	54.3±1.7	138.8±4.9	124.9±8.1	7.1±0.9	63.4±7.4*	5.9±0.2***
IFG+IGT (n=15)	66.4±3.3	29.6±1.3	99.6±2.7	155.2±6.5	92.2±2.0	192.8±7.9	50.8±4.0	128.6±5.0	128.3±16.4	10.7±1.4	85.1±15.0**	6.0±0.2***
T2D (n=34)	66.8±2.9	30.2±1.3	101.9±4.6	148.9±3.4	86.1±1.2	209.8±13.5	51.3±3.9	140.6±7.0	125.2±14.8	8.4±1.9	75.6±16.8**	6.1±0.2***

Figure 3 – Anthropometric and biochemical characteristics evaluated on the follow-up Prevadiab 2. Statistical analysis performed by ANOVA and Tukey post-test: * p<0,05, ** p<0,01 and *** p<0,001, in relation to normal.

RESULTS (4)

Initial Findrisc T2D risk score and 5-years outcome of glycemic status

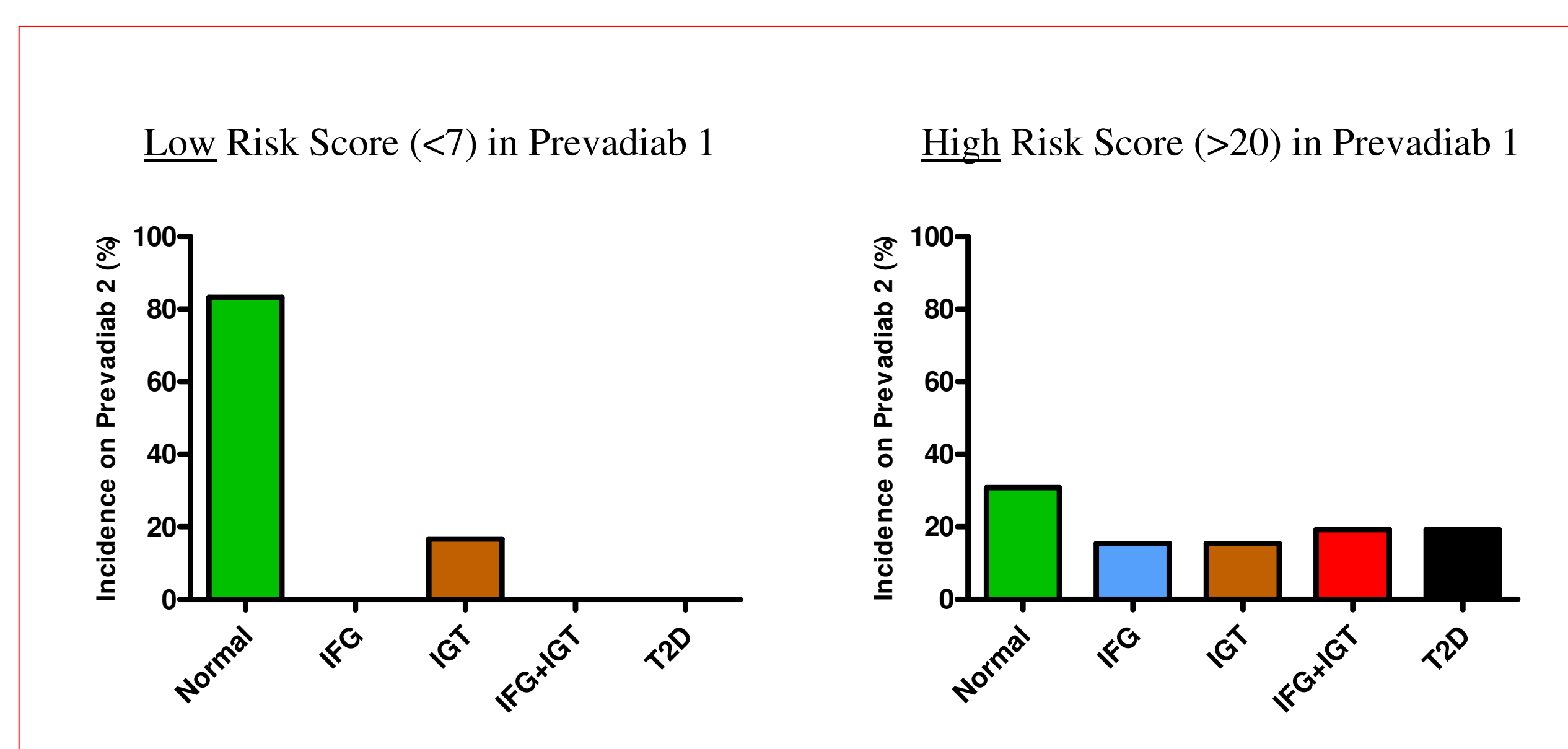


Figure 4 – Glycemic status as evaluated by the Prevadiab 2, further separated by lowest (<7) and highest (>20) Findrisc score previously obtained by the same individuals five years earlier (on the Prevadiab 1). On the other hand, risk score was not related to dysglycemia diagnosis on either Prevadiab 1 or the follow-up Prevadiab 2 (data not shown).

CONCLUSIONS

- Initial IFG+IGT showed the most precarious condition, with 60% of individuals diagnosed with diabetes on the 5 years follow-up.
- Prediabetes was detected on 21,8% of individuals (3,4% IFG, 14,6% IGT, and 3,8% IFG+IGT).
- While no individual initially included on the lowest FINDRISC score group (<7) progressed to diabetes, 20% of the highest score group (>20) progressed to diabetes (20%) or to the precarious IFG+IGT (20%) in 5 years.
- IFG+IGT are here shown as a high risk population, candidates for intensive intervention concerning glycemic control, due to an expectancy of quick progression to diabetes.
- FINDRISC seems an adequate tool to evaluate risk of diabetes development. This allows, from a simple questionnaire, to identify a sub-population prime candidate to further glucose homeostasis testing and intervention.

REFERENCES & ACKNOWLEDGEMENTS

[1] Gardete-Correia L, Boavida JM, Raposo JF, Mesquita AC, Fona C, Massano-Cardoso S (2010) Diabetes Med. 27(8): 879-881. [2] Schwarz PE, Schwarz J; Schuppenies A, Bornstein SR, Schulze J (2007) Public Health Rep. 122: 258-263.

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