Carla Ferreira | Helena Ferreira | Filipa Correia | Carla Meireles
PEDIATRIC DEPARTMENT OF CENTRO HOSPITALAR DO ALTO AVE–GUIMARÃES PORTUGAL

Cardiovascular risk factors
in children and adolescents with type 1 diabetes

Introduction

Diabetics have an **increased risk** of **cardiovascular disease**

➡ In young adults with type 1 diabetes mellitus (T1DM) ➡ cardiovascular events are principal cause of premature death

➡ In pediatric T1DM population ➡ 35% have 2 or more cardiovascular risk factors (cvRF)

Aims

① Determine prevalence of traditional cvRF in children and adolescents with T1DM
② Identify association between presence of traditional cvRF and degree glycemic control

Methods

- **Study type**: retrospective hospital-based study
- **Population**: Portuguese children and adolescents with the diagnosis of T1DM
- **Sample**:
  - **Type**: convenience sample ➡ T1DM patients with <18 yr followed in pediatric consultation of CHAA Guimarães
  - **Dimensions**: Total of 70 T1DM with <18 yr
    - ➡ n = 59 (diagnostic for at least one year)

- **Source of information**: S-clinic ® and single process
- **Outcomes**: age, gender, age of diagnosis, glicemic control, autoimmune (AI) disease, DM type of treatment, cvRF assessed were body mass index (BMI), blood pressure (BP), triglycerides (TG), high-density lipoprotein cholesterol (HDL) and low-density lipoprotein cholesterol (LDL)
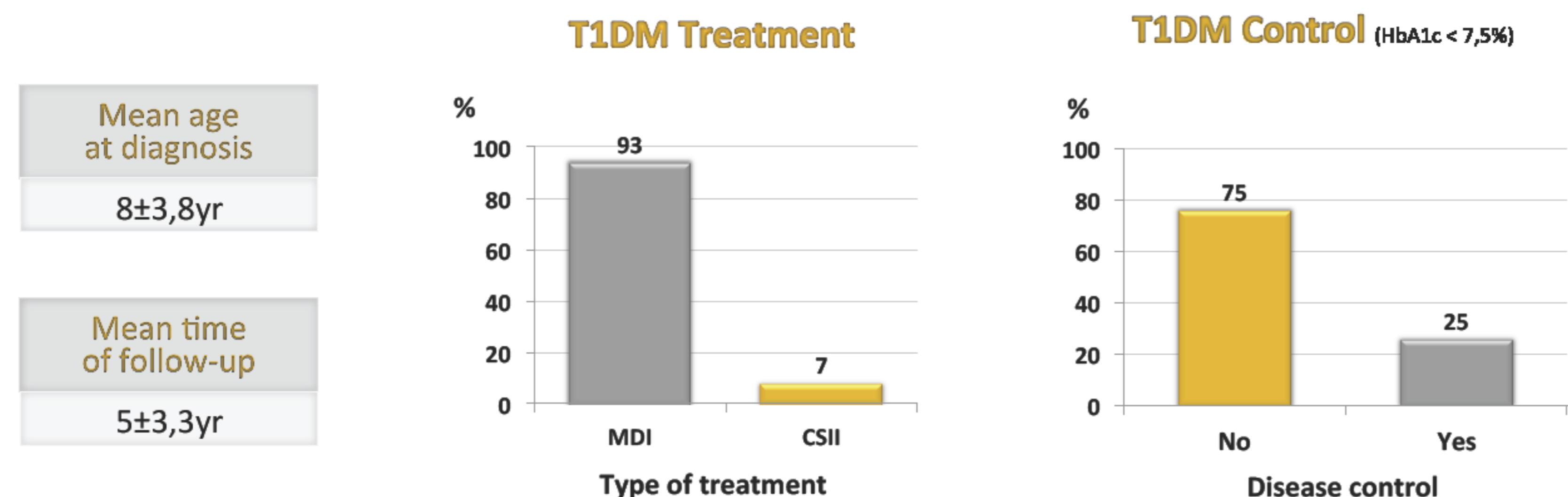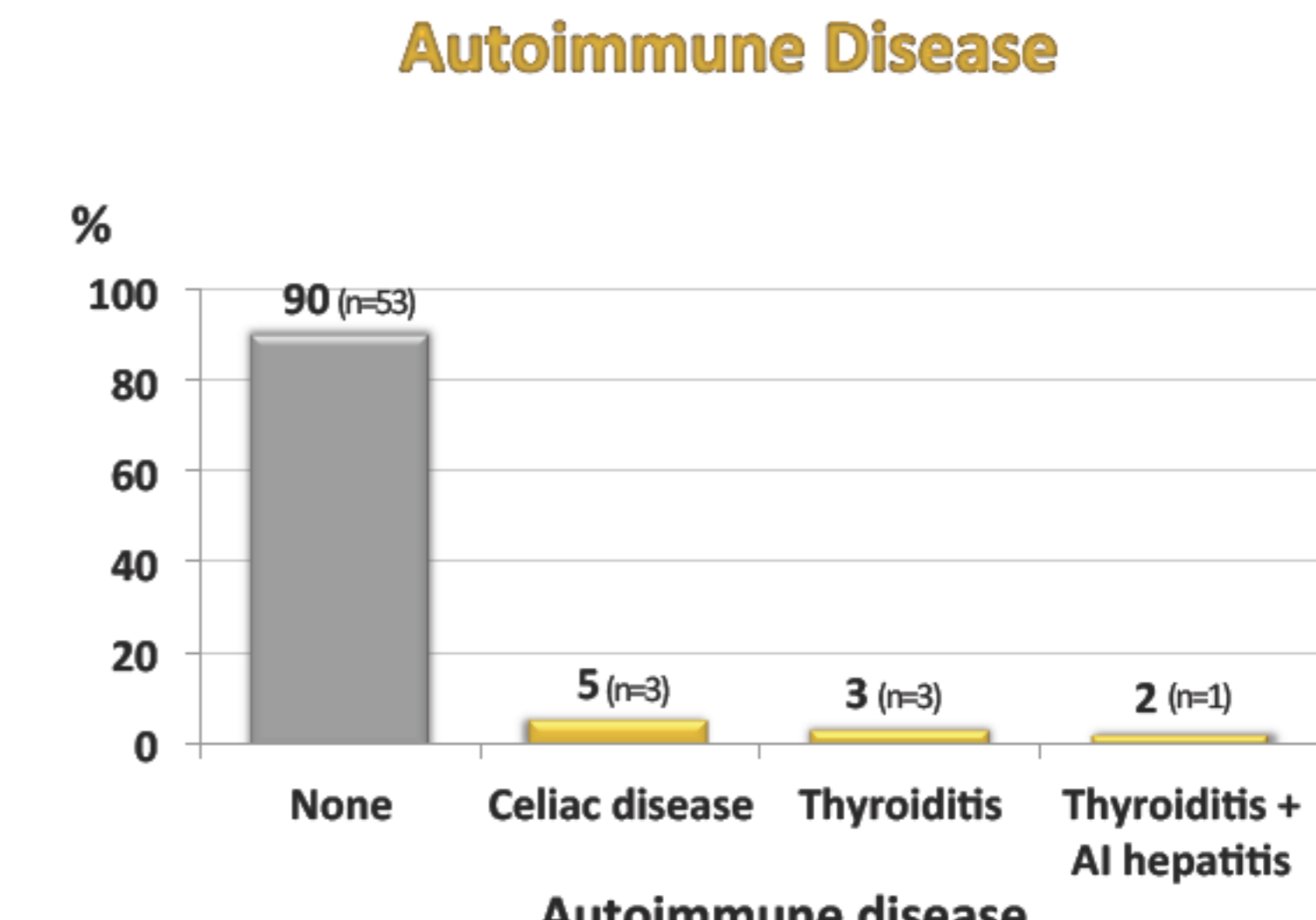- **Data analysis**: IMB SPSS®21, ($p < 0.05$)

Results

| n = 59 T1DM | ➡ | 41% ⚥ 59% | Mean age = 13±1.2 yr |

TYPE 1 DIABETES

T1DM Treatment

| Mean age at diagnosis | 8±3,8yr |
| Mean time of follow-up | 5±3,3yr |

T1DM Control (HbA1c < 7,5%)

AUTOIMMUNE DISEASE

Autoimmune Disease

TRADITIONAL CARDIOVASCULAR RISK FACTORS

Prevelence of Traditional cvRF

- Elevated BP ➡ ≥ P90 (for age, height and gender)
- Elevated TG ➡ ≥ 110 mg/dl
- Elevated LDL ➡ ≥ 110 mg/dl
- Decreased HDL ➡ ≤ 40 mg/dl
- Overweight/obesity ➡ IMC ≥ P85

| 84% = 1 cvRF | 12% = 2 cvRF | 4% = 3 cvRF |
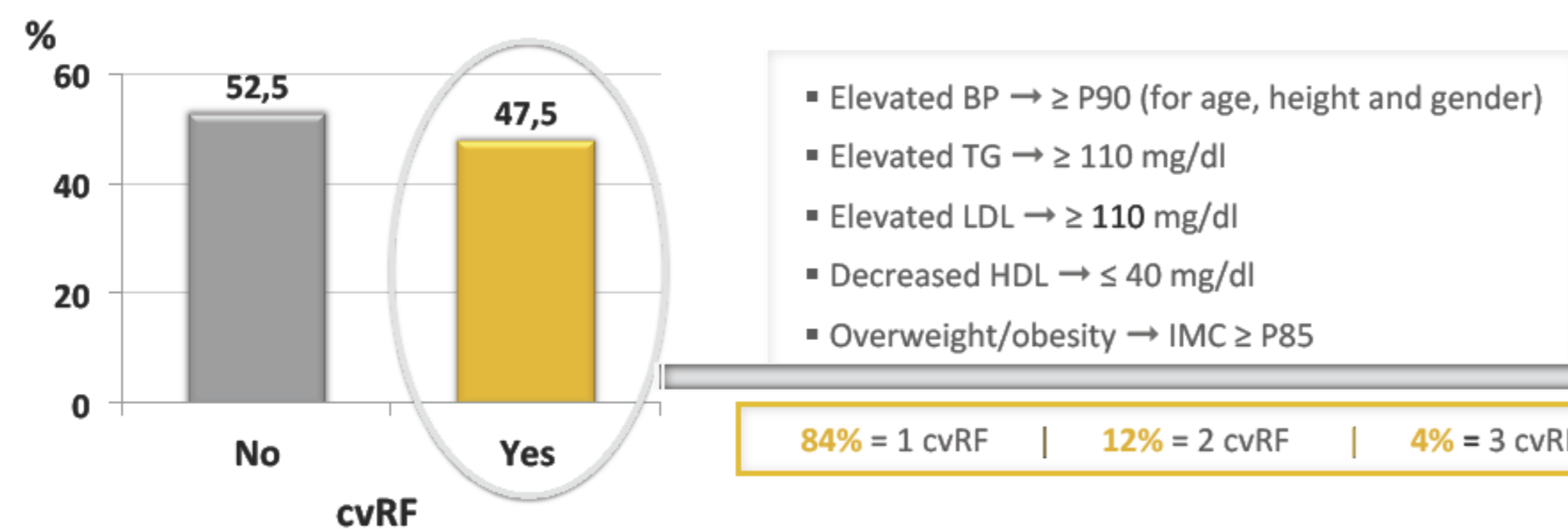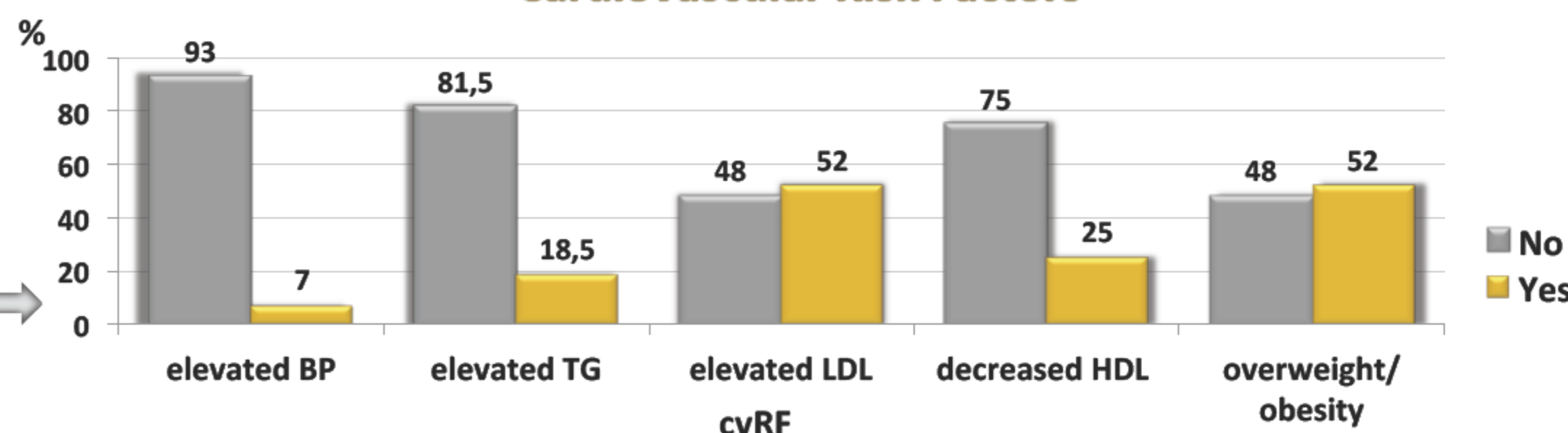
Cardiovascular Risk Factors

	Mean age at diagnosis*	Time of disease duration	Current mean age	Gender		Disease control		AI diseases	
				♂	♀	No	Yes	No	Yes
cvRF No	9.1±4.0yr	54.5±3.3yr	13.5±4.3yr	63%	63%	62%	64%	62%	67%
cvRF Yes	7.1±3.3yr	5.2±3.2yr	12.3±4.1yr	37%	37%	38%	36%	38%	33%

*p<0.05

Conclusion

- According to our study…
  - ✓ High frequency of cvRF in children and adolescents with T1DM
  - ✓ An early age at time of diagnosis is associated with more elevated prevalence of cvRF, and it was independent of disease duration
- Importance of early and systematic screening for cardiovascular risk factors ➡ Early intervention should be considered in all patients at risk

Bibliography: Expert Panel on Integrated Guidelines for Cardiovascular Health and Risk Reduction in Children and Adolescents: Summary Report. Pediatrics, 2011, Volume 128, Supplement 6, December; H. D. Margeirsdottir, J. R. Larsen, C. Brunborg, N. C. Overby, K. Dahl-Jorgensen. High prevalence of cardiovascular risk factors in children and adolescents with type 1 diabetes: a population-based study. Diabetologia, 2008, 51:554–561; Pambianco G., Costacou T., Orchard T. The Prediction of Major Outcomes of Type 1 Diabetes: a 12-Year Prospective Evaluation of Three Separate Definitions of the Metabolic Syndrome and Their Components and Estimated Glucose Disposal Rate. Diabetes Care 30:1248–1254, 2007. The SEARCH for Diabetes in Youth Study. Prevalence of Cardiovascular Disease Risk Factors in U.S. Children and Adolescents With Diabetes. Diabetes care, 2006, volume 29, number 8, august. Slim I.Cardiovascular risk in type 1 diabetes mellitus. Indian J Endocrinol Metab. 2013 Oct; 17(Suppl1): S7–S13.

ESPE 2015
735--P3
Diabetes 2
Carla Ferreira
DOI: 10.3252/pso.eu.54espe.2015
Poster presented at:
PosterSessionOnline.com