

# Diabetes mellitus and Chronic Kidney Disease - Two Decades of Consultation of Diabetes and Kidney Transplant, a Retrospective Study

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## Introduction

Diabetic nephropathy is the main global cause of end stage renal disease. According to the annual report from the Portuguese National Diabetes Observatory, in 2013, the prevalence of Diabetes mellitus (DM) in new cases of chronic kidney disease was 31,2%, and 11,1% in kidney transplant patients.

Potential recipients of a kidney transplant undergo a careful process of evaluation, selection and preparation.

## Goal

- To characterize the population of type 2 diabetic patients admitted in diabetes and kidney transplant consult (DKTC), comparing those admitted between the decade of Jan/1992-Dec/2001 (D1) and Jan/2002-Dec/2011 (D2).

## Methods

Retrospective analysis of type 2 diabetic patients admitted in DKTC between January 1992 and December 2011, registering the following data at first admission:

- age,
  - sex,
  - weight and BMI,
  - age of diagnosis and DM duration,
  - treatment,
  - metabolic control,
  - macro and microvascular complications.
- Statistical analysis with SPSS®.

## Resultados

### Overall Characterization:

- 238 patients (D1 n=66, D2 n=172) of a total of 332 (D1 n=66 e D2 n=266).  
58,28±7,737 years  
15,76±8,689 years of DM
- Comorbilidades:  
Hypertension – 80,3%  
Dyslipidemia – 35,5%  
Oncologic Disease – 7,9%

Figure 1. DM Treatment at 1<sup>st</sup> admission

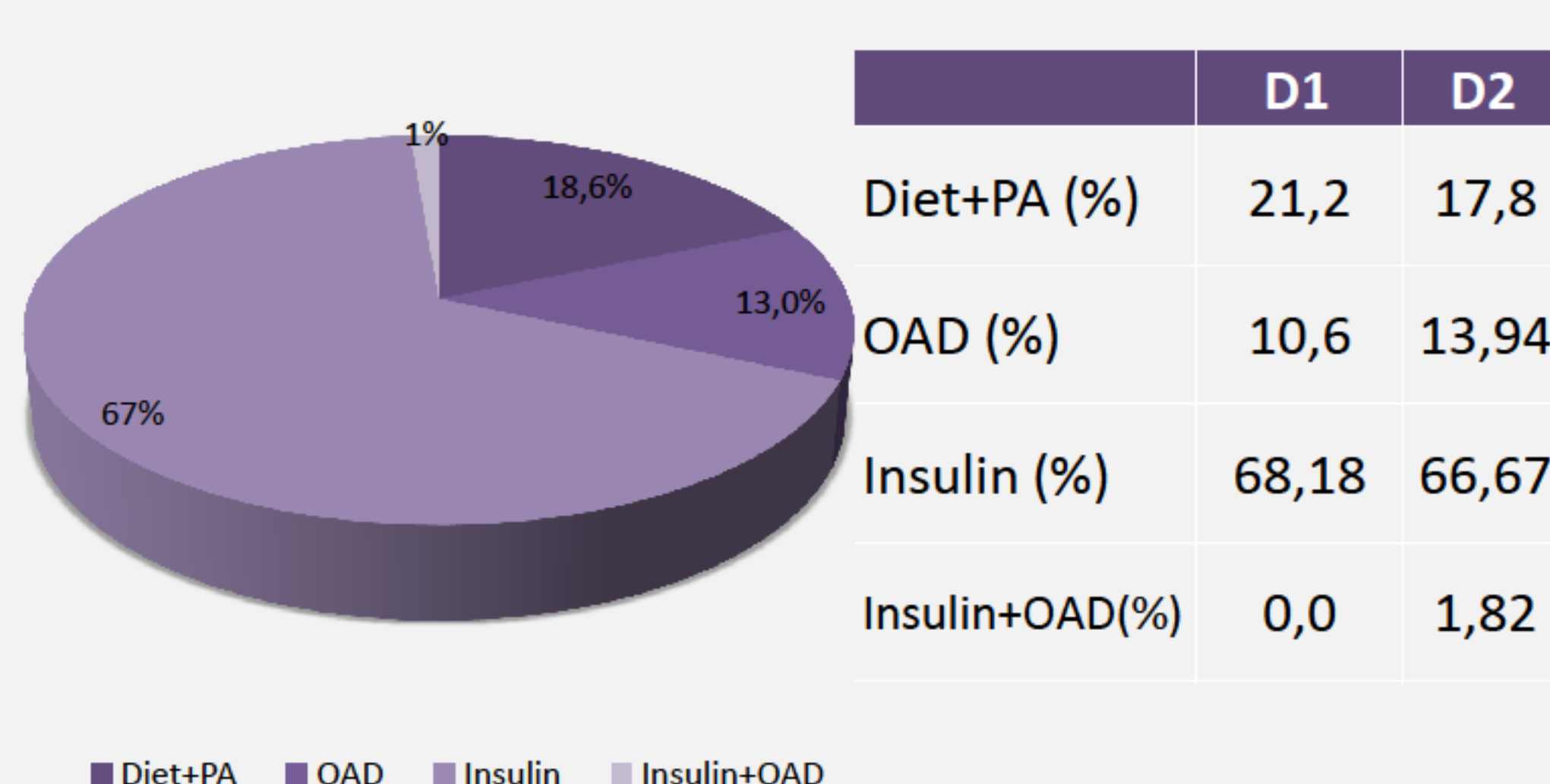


Fig 1: Diet+PA – diet and physical activity; OAD – Oral antidiabetic Drugs

Table 1. Characterization of patients according to decade of admission

	D1	D2	p
Nº of patients	66	172	
Medium Age at 1 <sup>st</sup> Admission (years)	56,91 ± 7,75	59,46 ± 7,08	0,016
Duration of DM (years)	15,36 ± 8,29	15,76 ± 8,61	0,750
Medium BMI at 1 <sup>st</sup> Admission (Kg/m <sup>2</sup> )	27,25 ± 0,552	28,26 ± 0,552	0,169
Medium HbA1c at 1 <sup>st</sup> Admission (%)	7,56 ± 1,83	7,13 ± 1,47	0,077

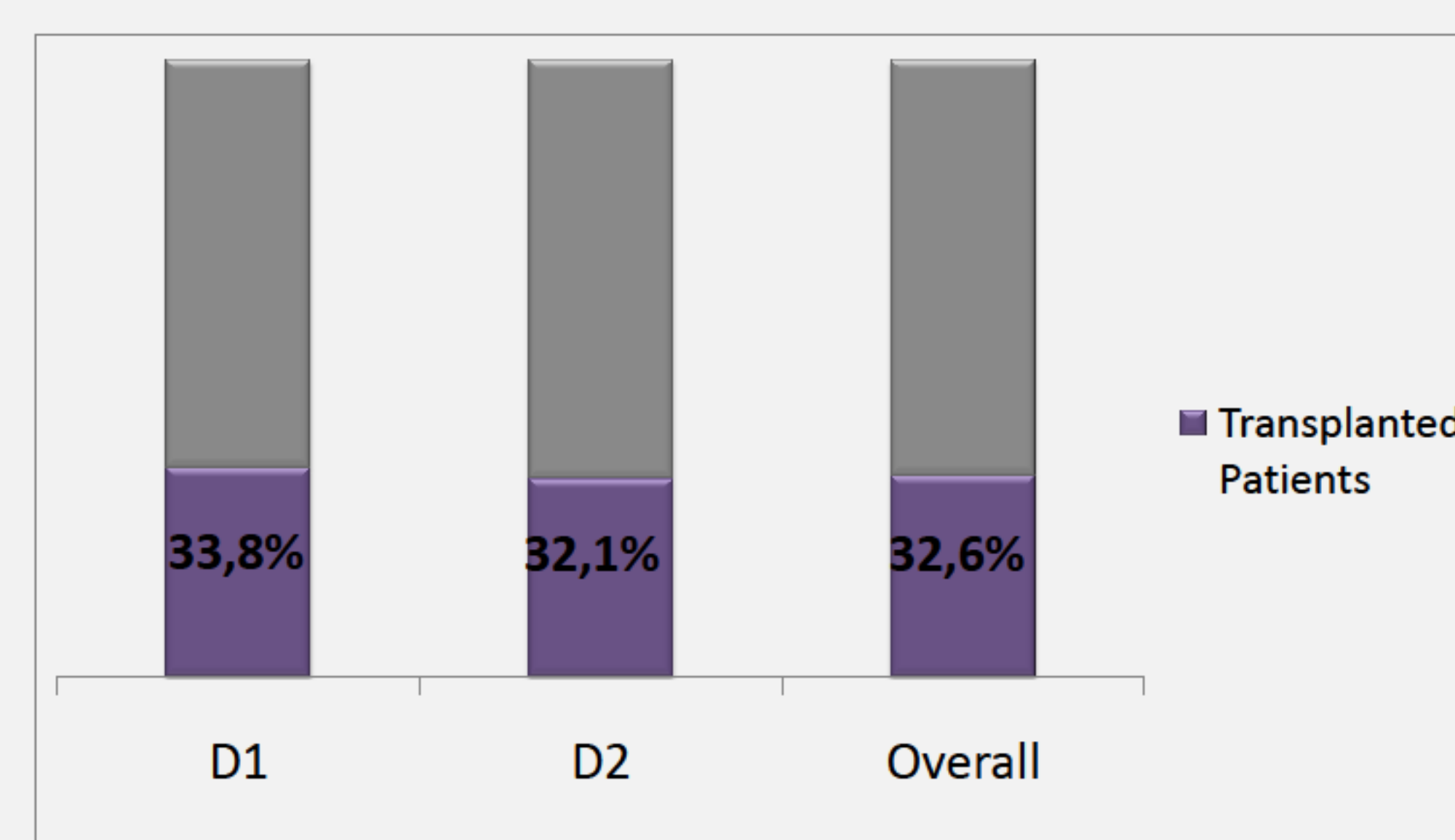
Table 2. Frequency of macro or microvascular complications according to decade of admission (at 1<sup>st</sup> admission)

	D1	D2	P
<b>MICROVASCULAR COMPLICATIONS</b>			
Diabetic Retinopathy	68,2%	65,1%	0,653
Proliferative Retinopathy	51,5%	43,1%	0,246
Amaurosis	7,6%	10,7%	0,476
Peripheral Neuropathy	31,8%	33,1%	0,847
Amputation	7,6%	8,8%	0,165
Major	1,5%	2,9%	0,806
Minor	6,1%	5,9%	0,293
<b>CORONARY ARTERY DISEASE</b>	31,82%	15,97%	0,007

Table 3. Orientation of DM2 patients according to decade of admission

	D1	D2	Global
<b>Transplant</b>			
Total of transplanted patients	22	53	75
Patients with definitive contraindication (%)	44,6	46,5	45,9
<b>Orientation (%)</b>			
Discharge / Follow-up in another institution	43,94	34,40	37,70
Abandon	31,82	16,80	21,99
Follow-up at CHUC	24,24	48,8	40,3

Figure 2. Patients submitted to Kidney Transplantation



## Conclusion

Diabetic patients admitted in DKTC generally have a long evolution of DM, with several comorbidities and complications.

Analyzing the first admission data from D1 and D2 patients only found statistical significant differences in patient's age (older at D2) and prevalence of coronary artery disease (larger at D1).

In the last decade, an increasing number of patients were referred to kidney transplantation, and although they were older, there was no larger prevalence of complications or comorbidities.

In two decades of follow-up only 32,6% of candidates were transplanted.

Because of their complexity these patients need multidisciplinary and specific care.

### References:

1 - Relatório Anual do Observatório Nacional da Diabetes, 2014. 2 - Guerra G, Ilhse A, Ciancio G. Diabetes and kidney transplantation: past, present, and future. Curr Diab Rep. 2012 Oct;12(5):597-603. 3 - Luan FL, Samaniego M. Transplantation in diabetic kidney failure patients: modalities, outcomes, and clinical management. Semin Dial. 2010 Mar-Apr;23(2):198-205.

