Prevalence, Time Trend and Predictors of Celiac Disease in Type 1 Diabetes

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Background

- Celiac disease is common in type 1 DM
- Symptoms of Celiac Disease masked
- Screening protocols unclear

Objective

To Study the prevalence, predictors and clinical profile of celiac disease in type 1 DM
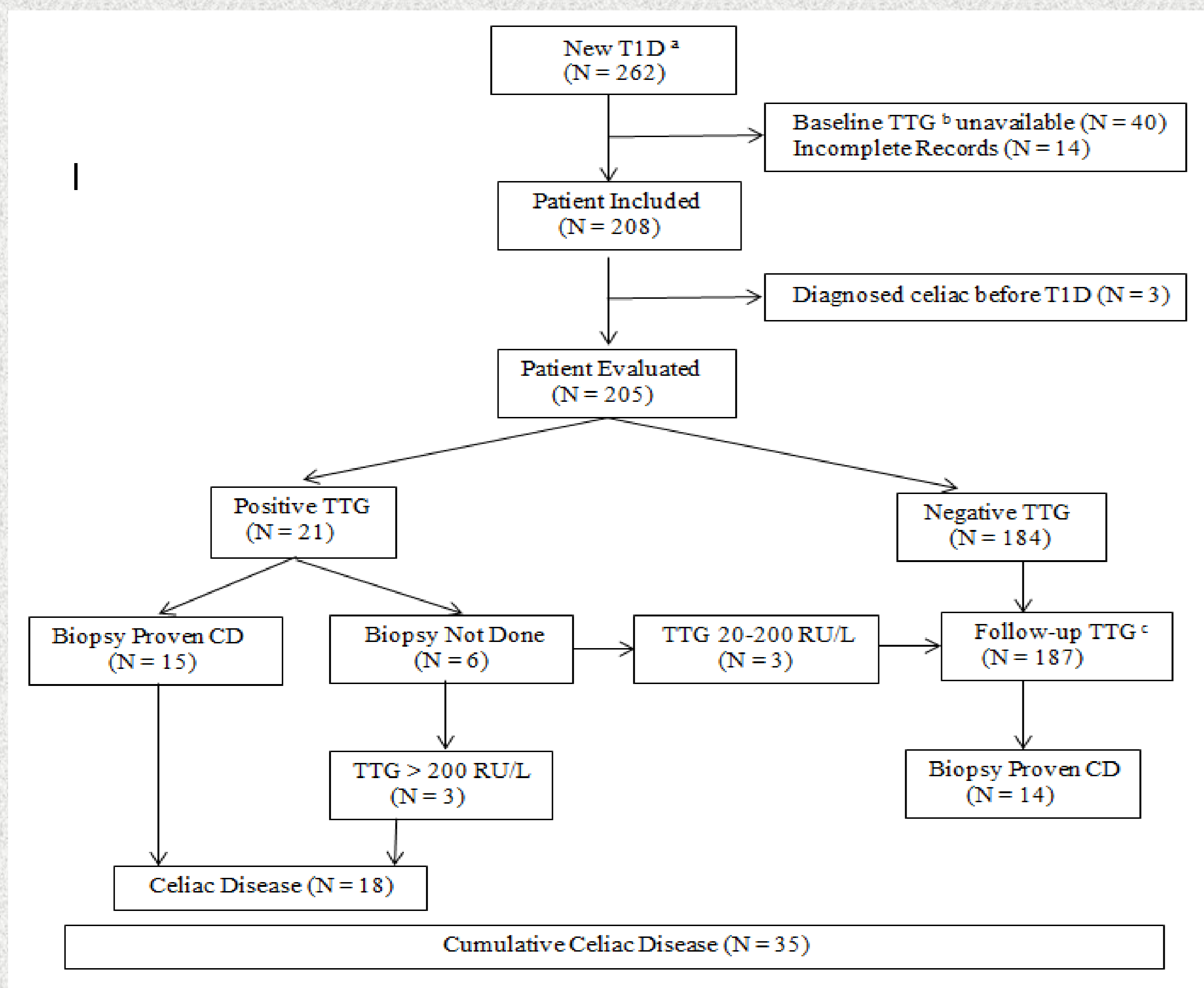
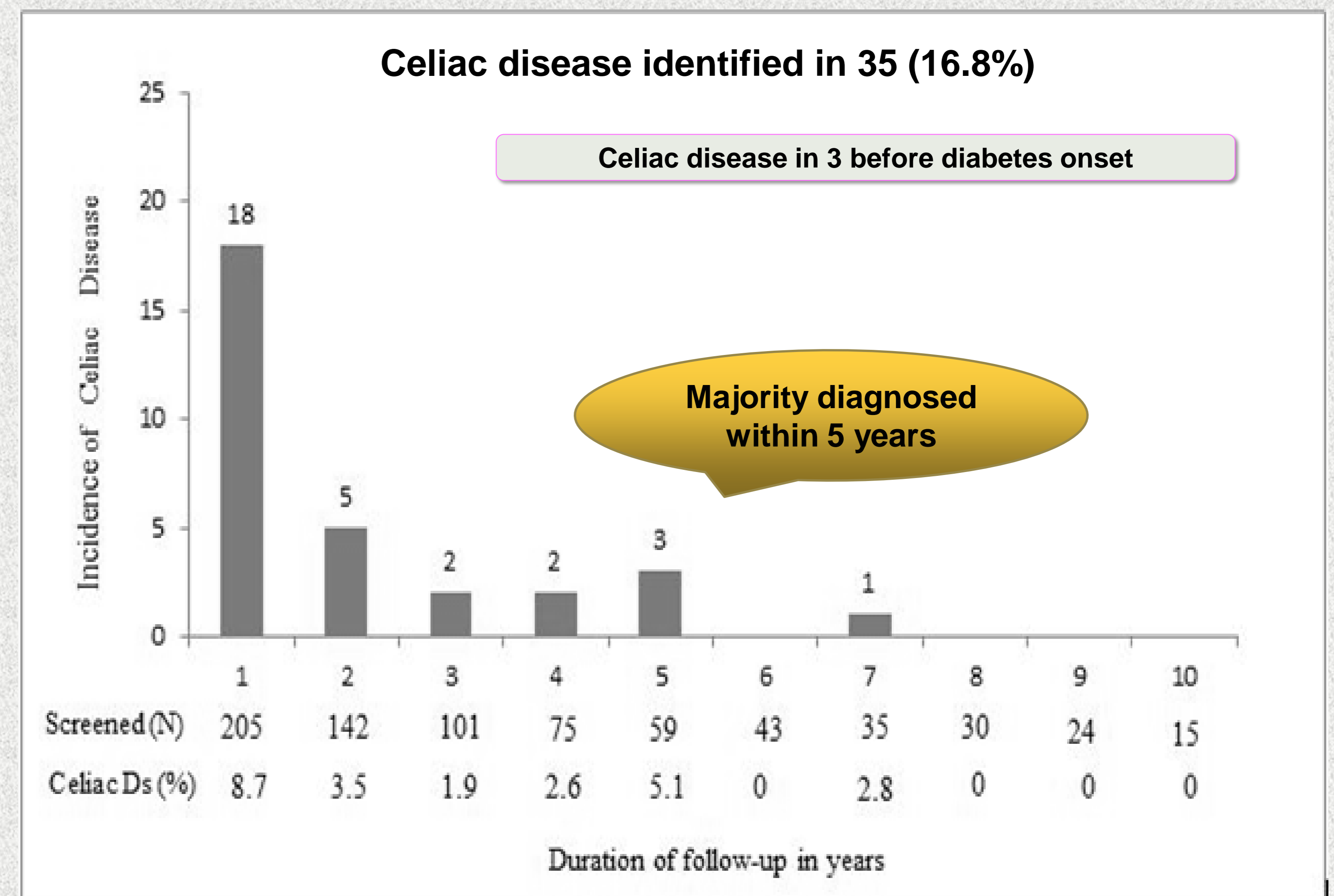### Study Design

Retrospective Study

Subjects & Methods

- 208 children with type 1 DM (106 boys; mean age 8.9 ± 4.3 years)
- Mean follow-up 4.9 ± 3.7 years
- TTG IgA at diagnosis & annually; biopsy for positive serology
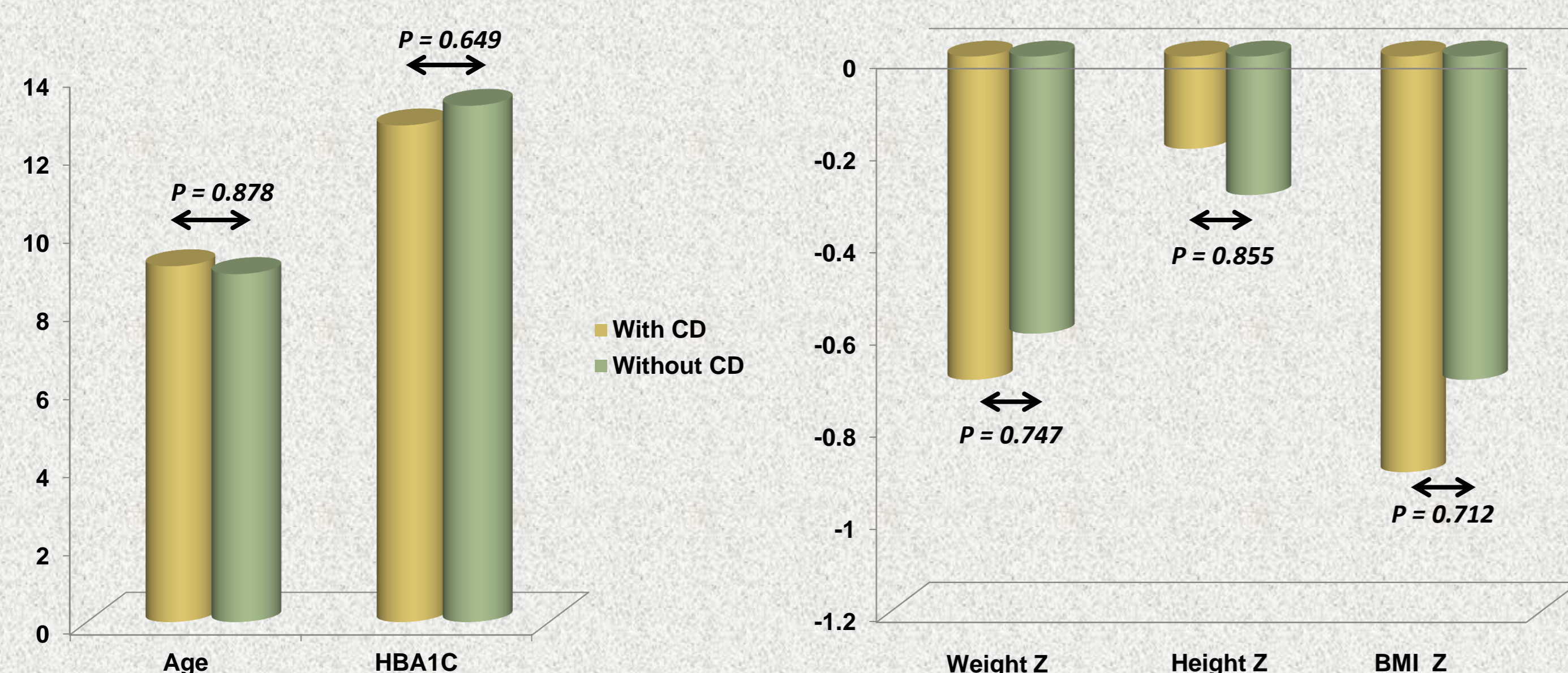
Results

Patient Enrolment

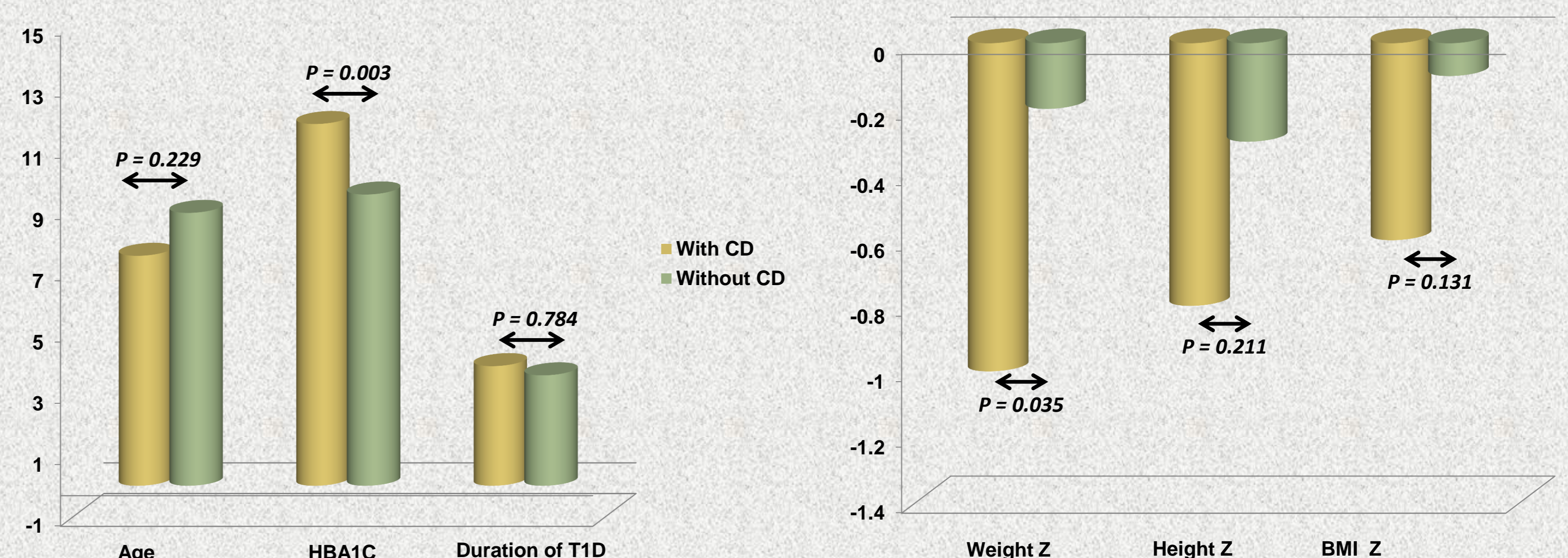New T1D [a] (N = 262) → Baseline TTG [b] unavailable (N = 40) Incomplete Records (N = 14)
→ Patient Included (N = 208) → Diagnosed celiac before T1D (N = 3)
→ Patient Evaluated (N = 205)
→ Positive TTG (N = 21) / Negative TTG (N = 184)
Biopsy Proven CD (N = 15) | Biopsy Not Done (N = 6) → TTG 20-200 RU/L (N = 3) → Follow-up TTG [c] (N = 187)
TTG > 200 RU/L (N = 3) | Biopsy Proven CD (N = 14)
Celiac Disease (N = 18)
Cumulative Celiac Disease (N = 35)

Time Course of Onset

Celiac disease identified in 35 (16.8%)

Celiac disease in 3 before diabetes onset

Majority diagnosed within 5 years

Duration of follow-up in years	1	2	3	4	5	6	7	8	9	10
Screened (N)	205	142	101	75	59	43	35	30	24	15
Celiac Ds (%)	8.7	3.5	1.9	2.6	5.1	0	2.8	0	0	0

At Diagnosis

Mean age at diagnosis and gender was comparable in both the groups

$P = 0.878$ (Age), $P = 0.649$ (HBA1C), $P = 0.747$ (Weight Z), $P = 0.855$ (Height Z), $P = 0.712$ (BMI Z)

With CD / Without CD

No risk factor identified

During Follow-up

Mean age at diagnosis and duration of T1D were comparable in both the groups

$P = 0.229$ (Age), $P = 0.003$ (HBA1C), $P = 0.784$ (Duration of T1D), $P = 0.035$ (Weight Z), $P = 0.211$ (Height Z), $P = 0.131$ (BMI Z)

With CD / Without CD

Compromised weight and glycaemic control in new onset CD

Conclusion

- Need for universal screening due to lack of identifiable risk factors at diagnosis of type 1 DM
- Usual onset within 5 years of diagnosis
- Compromised growth and glycemic control predicts celiac
- Periodic screening mandatory to prevent impact on growth and glycemic control

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