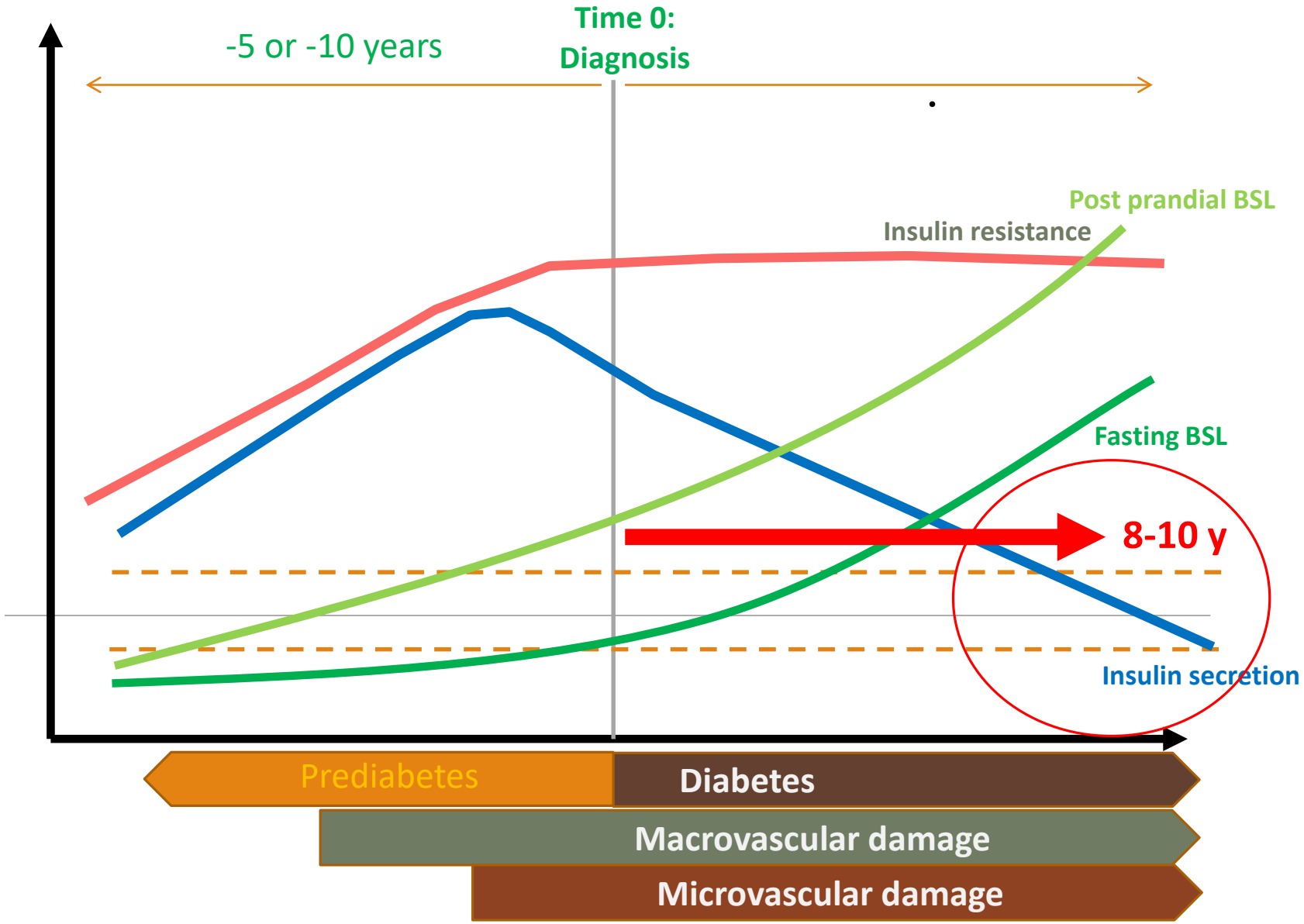
Case 2 +

WHEN BASAL IS NOT ENOUGH

The progression of T2D



Rose - recap

72 years old, Filipino lady
Diagnosed T2D since 2003
Metformin initially, then Diamicron added, then Sitagliptin
Byetta was initiated but stopped after 3 months due to lack of efficacy
Glargine U300 was commenced at 10 units before bed 4 years ago
Basal insulin titrated to 26 units to achieve HbA1c below 7.0%
Adherence to regular reviews have been irregular

4 years ago, Rose's glucose was satisfactorily controlled on 26 units glargine U300 before bed. Byetta was discontinued. Janumet was continued.

HbA1c 6.9%	Self - monitored blood glucose (mmol/L)								Comments
	Breakfast		Lunch		Dinner		Before Bed	Overnight	
	Before	After	Before	After	Before	After			
Day 1	6.5								
Day 2	5.9								
Day 3	6.1	7.3							
Day 4	6.1				5.8		8.0		
Day 5	5.8								
Day 6			6.4				8.3		
Day 7	6.0						7.8		

Current medications

Janumet® 50mg/1000mg bd (Sitagliptin/Metformin)
Toujeo® 42 units before bed (Insulin glargine U300)
Simvastatin 20mg nocte
Lipidil® 145mg nocte (Fenofibrate)
Perindopril 5mg mane

Latest findings

Examination:

Weight 48.5 kg, Height 152 cm

BMI 23.5 kg/m2

BP 129/65, HR 75 bpm, regular

No abdominal obesity noted

Cardiac/carotids/ECG - normal

Feet/ABI – normal

Retina – non-proliferative retinopathy, macula normal

Laboratory results:

Fasting BSL 6.6 mmol/L

HbA1c 8.6 % (70 mmol/mol)

TC 3.8 TG 2.4 HDL 0.9 LDL 1.8

GGT 88, AST 79

eGFR 59 mmol/L

uACR 3.6 mg/mmol

It's been 4 years since we started basal insulin. The latest diary shows

HbA1c 8.6%	Self - monitored blood glucose (mmol/L)								Comments
	Breakfast		Lunch		Dinner		Before Bed	Overnight	
	Before	After	Before	After	Before	After			
Day 1	6.5						8.8		42 units at bedtime
Day 2	5.9								42 units at bedtime
Day 3	6.1								42 units at bedtime
Day 4	6.1						8.0		42 units at bedtime
Day 5	5.8								42 units at bedtime
Day 6							8.3		42 units at bedtime
Day 7	6.0						7.8		42 units at bedtime

What clinical risks does Rose have?

- **Retinopathy**
- **ASCVD risk**
- Heart failure
- **CKD 3A**
- Peripheral arterial disease
- Neuropathy
- High risk foot

Go to menti.com and Use code 56 73 82

Question 8: What is Rose's HbA1c target now?

1. 6.0-6.5%
2. 6.5-7.0%
3. 7.0 – 8.0%
4. >8.0%
5. Doesn't matter – too late now

BEFORE WE ESCALATE THERAPY…

STOP RULE!

STOP RULE!

- Adherence
- Motivation
- Patient education
- Lifestyle issues
- Drug interaction
- Intercurrent infection
- Secondary causes – pancreatic pathology
- Have we excluded T1D

Lifestyle issues are as **important** in early as well as advanced diabetes

Diet

Carbohydrate intake

Regular exercises

Aerobic

Resistance

Weight loss

Low calorie diet option

Bariatric surgery in appropriate patient

Managing weight

Dietitian referral

Low calorie diet

Very low calorie diet

Saxenda injections

Bariatric surgery

PBS restrictions

Insulin (basal, basal plus, basal-bolus or mix) plus only one of the following:

GLP1-RA injectable (Byetta® only)

DPP4 inhibitor

SGLT2 inhibitor

TZD

Question 9: Glycaemic control options for Rose

Go to menti.com and Use code 56 73 82

Increase basal insulin to get HbA1c to target?

Change DPP4 inhibitor to SGLT2 inhibitor?

Change HbA1c target to accept <8.0%?

Consider adding a prandial insulin?

Do nothing, see three months?

Refer to endocrinologist or CDE?

What can help us make a decision?

SMART MONITORED BLOOD GLUCOSE (SMBG)

What if Rose's diary looks like this

Scenario 1

HbA1c 8.6%	Self - monitored blood glucose (mmol/L)								Comments
	Breakfast		Lunch		Dinner		Before Bed	Overnight	
	Before	After	Before	After	Before	After			
Day 1	6.5	10.3							42 U basal insulin bedtime
Day 2			9.3	10.4					42 U basal insulin bedtime
Day 3					8.4	9.6	9.2		42 U basal insulin bedtime
Day 4	6.1	10.8							42 U basal insulin bedtime
Day 5			8.1	10.2					42 U basal insulin bedtime
Day 6					8.2	9.9	8.3		42 U basal insulin bedtime
Day 7	6.0	10.7							42 U basal insulin bedtime

Treatment Options?

What if Rose's diary looks like this

Scenario 2

HbA1c 8.6%	Self - monitored blood glucose (mmol/L)								Comments
	Breakfast		Lunch		Dinner		Before Bed	Overnight	
	Before	After	Before	After	Before	After			
Day 1	6.5	7.8							42 U basal insulin bedtime
Day 2			7.3	9.0					42 U basal insulin bedtime
Day 3					7.9	12.2	11.2		42 U basal insulin bedtime
Day 4	6.4	8.5							42 U basal insulin bedtime
Day 5			7.6	9.2					42 U basal insulin bedtime
Day 6					8.2	13.2	12.3		42 U basal insulin bedtime
Day 7	6.5	8.7			8.3	12.8			42 U basal insulin bedtime

Treatment Options?

What if Rose's diary looks like this

Scenario 3

HbA1c 8.6%	Self - monitored blood glucose (mmol/L)								Comments
	Breakfast		Lunch		Dinner		Before Bed	Overnight	
	Before	After	Before	After	Before	After			
Day 1	6.5	10.3							42 units at bedtime
Day 2			9.3	12.4					42 units at bedtime
Day 3					8.4	11.6	9.2		42 units at bedtime
Day 4	6.1	10.8							42 units at bedtime
Day 5			8.1	12.2					42 units at bedtime
Day 6					8.2	12.9	11.3		42 units at bedtime
Day 7	6.0	10.7							42 units at bedtime

Treatment Options?

What if Rose's diary looks like this

Scenario 4

HbA1c 8.6%	Self - monitored blood glucose (mmol/L)								Comments
	Breakfast		Lunch		Dinner		Before Bed	Overnight	
	Before	After	Before	After	Before	After			
Day 1	7.5	9.3							42 units at bedtime
Day 2			8.3	10.4					42 units at bedtime
Day 3					8.4	10.6	10.2		42 units at bedtime
Day 4	8.1	10.4							42 units at bedtime
Day 5			8.7	11.2					42 units at bedtime
Day 6					8.2	10.6	9.8		42 units at bedtime
Day 7	8.0	10.7							42 units at bedtime

Treatment Options?

Follow up beyond intensifying from basal insulin

- Review HbA1c target
- Regular HbA1c and diary review
- Microvascular complication screening
  - Retina, heart failure, renal impairment, peripheral vascular disease
- Macrovascular complication screening
  - Coronary heart disease, Cerebral heart disease, abdominal aneurysms
- Co-morbidities
  - Degenerative arthritis, liver/Biliary/Pancreatic pathology, Iron deficiency, malignancies
- Look for hypoglycaemia

Further considerations

Consider stopping sulphonylureas

Review metformin dose as renal function declines

Review hypoglycaemia risk and management

Consider peri-operative management

In summary, when intensifying from basal insulin, we could consider:

Reducing	Reducing dietary carbohydrate if possible
Adding	Adding oral therapy to basal insulin
Adding	Adding GLP1-RA to basal insulin
Adding	Adding prandial insulin as required according to post prandial glucose readings – basal plus one or basal plus two or basal-bolus regimen
Adding	Adding prandial insulin as co-formulation (Ryzodeg) according to which is meal has the biggest glucose excursion – at dinner time or at breakfast time

Conversion from basal to co-formulation

1:1 conversion

e.g.

42 units Toujeo ® (insulin glargine U300) at bed time

→ 42 units Ryzodeg® at dinner time

Titrate to morning pre-breakfast glucose readings

Thank you