Case study for CME
Diabetes up-to-date management

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GP referral to Auckland Diabetes Centre

Reason for referral:
Clinical Review by specialist
Diabetes type: Type II
Year diagnosed: 2003
Enrolled in chronic care management: Yes
Main issues: Poor control

Referral details:
Thank you for seeing W. in your Clinic . Her HbA1C has been steadily increasing .
We have offered to start Insulin but W. is not keen and would like to be seen at Clinic to see if there are any other alternative oral medication options .

Date	Description	Value
15/03/2016	Cholesterol total (mmol/L)	3.9
15/03/2016	Cholesterol LDL (mmol/L)	1.9
15/03/2016	Cholesterol HDL (mmol/L)	0.95
15/03/2016	Triglyceride (mmol/L)	2.4

Date	Description	Value
06/04/2017	Serum creatinine (umol/L)	68
06/04/2017	EGFR	87
15/03/2016	Urine albumin / creatinine ratio (ACR) (mg/mmol)	8.8
06/04/2017	**Hb A1c (mmol/mol)**	**92**

Hx: 2005

I saw W at our Centre on the 1 April 2005 for annual review.

As you are aware, she has put on some weight recently. Her present weight is 105.2kg and her BP is 120/80. Her eyes are due for screening in 2006.

Current medications:

- Metformin 500mg x1 bd
- Inhibace od.

Plan

- I have sent her for a blood test with a copy to you.
- I will arrange for her to have a dietitian review.
- If all is well, I will see her in 12 months time.

Hx 2006

1. Type 2 diabetes (2 years)
2. Microalbuminuria – latest ACR 5.8mg/mmol
3. Borderline hypertension (today 135/94 sitting)
4. Obesity (103.7kg today, 167cm height, BMI 37.1kg/m2)
5. Motivation issues (currently little planned exercise, not home testing)

1. Metformin 500mg bd
2. Inhibace (dose increase from ½ tablet daily)
3. Aspirin 150mg daily

….Weight loss remains a critical issue to long term control and prognosis. I have encouraged her to lose 1kg/month, on average, and discussed ways to help here.

Currently she is not doing any regular planned exercise and I have encouraged her to somehow manage this as part of her lifestyle. Motivation, of course, will be critical.

BP today was 135/94. I gather that you've noted it as borderline in the past. I think that she should take increased her dose of ACE Inhibitor, given the fact that she also has microalbuminuria.

I have asked for a check of electrolytes and creatinine in three weeks time.

Her lipid profile was good today (total cholesterol 4.6, HDL 1.1, LDL 2.8, triglycerides 1.5 mmol/L).

Hx 2015 - dietitian

Nutrition Diagnosis

Excessive oral intake related to emotional stress leading to comfort eating.

Intervention
Today we discussed as follows:

1. The importance of choosing healthier options for snack foods – avoiding high carbohydrate and high fat choices and choose high protein options such as egg or nuts .

2. The healthy plate model - appropriate portion sizes including a small reduction in carbohydrates by around 25%,

3. Increasing intake of non-starchy vegetables to help satiety

My impression is W is somewhat motivated to make dietary changes, however may not be in the right space emotionally to put these into action.

I wish to offer her ongoing support and I plan to see her again in approximately two months.

Recap: 56 year old female

- Type 2 diabetes for 13 years
- Previous gestational diabetes (1997)
- Obesity – Edmonton obesity stage II
- Hypertension
- Carrier Hepatitis B - diagnosed 2013
- Previous postmenopausal bleeding

- Not keen to use insulin, looking for alternative management approaches

Results:

- BMI 38 kg/m2
- Blood pressure 130/70mmHg
- HbA1c 92mmol/mol
- eGFR 87, ACR 6.2 mg/mmol
- Liver function test normal
- TC 3.9, TG 2.6, HDL 0.88, LDL 1.8,
- TC/HDL ratio 4.4

Medication

- Metformin 850 mg tds
- Gliclazide 160 mg bd
- Cilazapril 5 mg od
- Felodipine 5 mg od
- Lipex 20 mg nocte

Next treatment options?

1. Insulin
2. SGLT2 inhibitor (e.g. Dapagliflozin)
3. DPP4 agonist (e.g. Sitagliptin)
4. GLP1 agonist (e.g. Exenatide)
5. Pioglitazone
6. Duromine / meal replacements
7. Combination of the above
8. Bariatric surgery

Why would you chose any of the above?

1. What do you know about the different treatment options (1-6)?
2. When would you chose one over the other – what are your indications?
3. What are their pros-cons?
4. What do you know about side effects?
5. When do you refer to bariatric surgery?
6. What do you need to do before referral to bariatric surgery?
7. Are there any other options?

Aims / learning points

1. Comprehensive assessment of the patient with type 2 diabetes and obesity

2. Practical guide for using new diabetes medications (licenced in NZ)

3. Work-up for bariatric surgery

4. Alternatives to bariatric surgery

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What treatment did she receive?

She had normal FBC before starting Rx (including normal HCT and MCH).
She is a non-smoker and had no acute unwell episode, diarrhoea or hospital admission.

What are side and side effects of this treatment?

Haemoglobin	150	g/L		115 - 155
RBC	5.59	x10^12/L		3.60 - 5.60
HCT	**0.47**	**L/L**	**H**	**0.35 - 0.46**
MCV	84	fL		80 - 99
MCH	**26.8**	**pg**	**L**	**27.0 - 33.0**
Platelets	314	x10^9/L		150 - 400
WBC	6.3	x10^9/L		4.0 - 11.0
Neutrophils	3.50	x10^9/L		1.90 - 7.50
Lymphocytes	2.25	x10^9/L		1.00 - 4.00
Monocytes	0.41	x10^9/L		0.20 - 1.00
Eosinophils	0.08	x10^9/L		< 0.51
Basophils	0.04	x10^9/L		0.00 - 0.20