HealthPathways Melbourne

Putting knowledge into practice

CASE STUDY 28:

Incidental finding of reduced eGFR leading to chronic kidney disease diagnosis

George, 66, is a retired bank clerk who rarely attends his regular GP. He is doing so today for a review of his blood pressure, which was checked for the first time in this practice a month ago when he saw a nurse to have a vaccination.

He is otherwise well but the blood pressure reading was 168/106. At that time the nurse had a chat to his GP and some initial hypertension investigations were performed. These were specified on the HealthPathways Melbourne Hypertension pathway. Lifestyle advice was also provided.

His blood tests were all normal except for his eGFR, which was 48. A repeat arranged by the practice nurse by telephone a few days later was 47.

Today his blood pressure is 164/104.

His GP recognises the eGFR values as passing the threshold for chronic kidney disease (CKD). Knowing that this is an issue that requires further assessment and monitoring, but not recalling the precise details, she finds the Chronic Kidney Disease pathway in HealthPathways Melbourne.

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She is reassured to find that this is a recently reviewed pathway, a status viewable by clicking "page information" in the panel on the right. The first sentence in the management section states that it is based on the latest edition of Kidney Health Australia's CKD Management in Primary Care handbook for GPs.

She notes the emphasis on finding a cause for the CKD and speculates that the probability diagnosis here would be hypertension, which may have been happening for some time before the vaccination attendance.

The pathway also lists routine additional investigations, including renal USS, fasting glucose or HBA1c, and fasting lipids. These are usefully performed to check for other causes of CKD, such as benign prostatic hypertrophy or diabetes, and assessment of cardiovascular risk.

It also suggests urinary ACR, noting micro or macro albuminuria can define more severe CKD for any given level of eGFR.

George gets these tests done and is reviewed in a further consultation a week later. He does not to have albuminuria.

With this result to hand, the next step in the pathway is to identify the stage of CKD. The table in section A5 (see next page) shows that George's value of eGFR, in combination with an absence of micro or macroalbuminuria, means he has stage G3aA1 CKD. The yellow shading corresponding to this links to the yellow monitoring plan described later in the management section of the pathway.

A further step advises the need to perform a full vascular risk assessment. Using the information for level of age, level of CKD, total and HDL cholesterol and history of smoking, the online calculator defines George's risk as intermediate. Had the eGFR been less than 45, the text explains, he would have been defined as having high vascular risk without further factors needing to be taken into account.

The GP revises next steps.

The management section identifies a number of scenarios requiring referral to nephrologists, but for now none apply to George.

In item four on the pathway there is the yellow monitoring plan for annual clinical and blood tests appropriate for George's identified level of CKD. Whatever else is done this should be put in place in organised follow up appointments.

However, in item five there is information about how hypertension should be managed. A target blood pressure of 130/80 is set and medication advised. ACE inhibitors or ARBs are first choices due to their renoprotective effect.

A drop-down panel about those drugs suggests some monitoring of renal function one to two weeks after commencement. It advises that some lowering of eGFR is a possible consequence and provides a safe limit for this.

It also advises actions related to an increase of potassium when the drugs are taken. Possible additional drugs are mentioned and advice made to follow the Hypertension pathway for more information.

Other information in section five provides advice on dyslipidaemia if patient lipid results require this, and linkage to the Hyperlipidemia pathway.

The GP discusses all of this with George. She realises that there is a lot of information for him to absorb. She accesses the patient information sections of the pathways to quickly find printable leaflets to support the discussion.

To give him time to read everything, she elects to schedule a review George in 10 days. She will start an ACE inhibitor at that stage.

Further reviews to titrate the blood pressure are likely at three-to-four-week intervals initially. The addition of lipid lowering medication may be considered, depending on the measurements.

The yellow CKD monitoring plan and follow up for hypertension and hyperlipidaemia can also be integrated into a MBS chronic condition management plan. In section seven there is a link to the Chronic Condition Management Items pathway which guides GPs through this process.

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Figure 1: Stages of chronic kidney disease (CKD)

Staging of chronic kidney disease				
		Persistent albuminuria stage		
Kidney function stage	eGFR mL/min/1.73m^2	A1 Normal < 3.0 mg/mmol	A2 Microalbuminuria 3.0 to 30 mg/mmol	A3 Macroalbuminuria > 30 mg/mmol
G1	≥ 90	Not CKD unless haematuria, structural or pathological abnormalities present.		
G2	60 to 89			
G3a	45 to 59			
G3b	30 to 44			
G4	15 to 29			
G5	< 15 or dialysis			