Management of A Patient with Chronic Kidney Disease in the Internal Medicine Ward of Dr. Saiful Anwar Hospital Malang–Indonesia: A Case Report

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BACKGROUND AND SETTING
Chronic kidney disease (CKD) encompasses a spectrum of different pathophysiological processes associated with abnormal kidney function, and a progressive decline in glomerular filtration rate (GFR). In year 2000, data from Health Department of Indonesia shows that about 10% of the adult population has CKD. Dr. Saiful Anwar General Hospital Malang–Indonesia, CKD is one of the diseases that has high incidence, about 749/year. From the laboratory data, CKD may be suspected if the serum ureum and creatinine increase more than normal value, whereas the GFR decreases below 60 ml/min/1.73m². Due to the poor renal performance in CKD, doses of many drugs are affected and need to be adjusted in order to avoid drug accumulation or drug deficiency. The poor renal performance in this patient influences renal excretion of some drugs which consequently necessitates dose adjustment. In this particular patient the drugs needed dose adjustment were furosemide, clonidine, captopril, and metoclopramide.

OBJECTIVES
This report describes the challenges faced in real setting, in the Internal Medicine Ward of Dr. Saiful Anwar General Hospital, when the patient with CKD comes from poor family and identifies the potential pharmacist roles in medication dosing, drug adjustments and other Drug Related Problems (DRPs).

CASE PRESENTATION
A 30-year-old male patient, 51 kg, 158 cm, was admitted to the hospital with chief complaints of weakness, headache, back pain and vomiting. He had hypertension since 2007, controlled by captopril 12.5 mg daily. Patient frequently consumes energy drinks containing taurine 2-3 times/week for about 3 years. The past laboratory findings history: Hb 5.5; Leukocytes 4400; ESR 80; Thrombocytes (103) 214; Proteinase 156; Creatinin 18.9; Uric Acid 6.3; Total bilirubin 0.7; Direct bilirubin 0.3; Indirect bilirubin 0.4; SGOT 4; SGPT 27; Alkal phophatase 190.

DISCUSSION
During his hospital stay, the patient underwent haemodialysis twice. Other intervention, i.e drug therapy, and the related clinical data are presented in the tables. Patient was discharged in slightly better condition.

THERAPY

<table>
<thead>
<tr>
<th>Drug</th>
<th>Normal dose</th>
<th>Dose adjustment</th>
<th>Dose given for this patient</th>
<th>Reference</th>
</tr>
</thead>
<tbody>
<tr>
<td>Captopril</td>
<td>12.5 mg</td>
<td>75% reduction</td>
<td>3.75 mg</td>
<td>British National Formulary (2007) 54th ed.</td>
</tr>
<tr>
<td>Clonidine</td>
<td>0.15 mg</td>
<td>75% reduction</td>
<td>0.0375 mg</td>
<td></td>
</tr>
<tr>
<td>Kalitake</td>
<td>2x2 sachets</td>
<td>100% reduction</td>
<td>2x2 sachets</td>
<td></td>
</tr>
<tr>
<td>Furosemide</td>
<td>10 mg</td>
<td>100% reduction</td>
<td>1 mg</td>
<td></td>
</tr>
</tbody>
</table>

CONCLUSION
1. Medication doses required in CKD patient are to be adjusted.
2. Some conditions of the patient need more attention, e.g. hypertension and anemia in this particular case.
3. Limited drug alternatives covered in ASKESEN formulary, low income of the patient/family and rather complicated procedure to get some drugs may result in delay and mis-dose with bad clinical consequences for the patient.

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