MAJALAH KEDOKTERAN DAN KESEHATAN KERJA PERDOKI

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OCCUPATIONAL MEDICINE APPROACH SYSTEM TO SOLVE THE URETER COLIC (URINARY CALCULI PROBLEMS) IN FRIED SNACK VENDOR

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Abstract
A case study of a male worker (Pedagang Gorengan) with ureter colic which had an occupational and family problem. A male worker, 31 years old, came to KDK Klara; the symptoms were colic of right ureter one day before going to KDK and less urine volume during 2 months; the patient drank only small quantity of water and ate a lot of 'emping' snacks; heat stress exposure since 10 years from 'kompor' and sunshine. In physical examination there were right costa vertebrae pains, he looked very sick (could not walk by himself). After the working diagnosis was made (WD/Ureter Colic), home as well as plant (working place) visits had been conducted by the clinic staff. Findings of these visits had been reported to the doctor and used for interventions on the problem. The patient had received interventions for several times that included improvement of work tools and environment, how to do work properly, etc. The occupational diagnosis for this case was ureter colic of a male worker (urinary calculi) related to heat stress exposure of 10 years duration. This worker had been treated for his illness and interventions had been made for improvement of the workplace and information about how to work healthily and safely had been given.

Keywords:
Occupational medicine approach, occupational health services, ureter colic

Introduction
Health services in Indonesia could be divided into 2 (two) major categories namely government and private sectors. More than 60 percents of people work in informal sector and 70 percent of them are not served or underserved by health service. The usual health services system approach is the community approach, but in the recent practice a lot of doctors conduct services based on individual approach.

Health Act No. 23 provides general statement on occupational health and occupational health service. So does Act Medical Practice. Labour Acts and Regulations specify in details norms and requirements on occupational health services in industry, ILO and WHO joint committee issues information on basic occupational health service and its trend of development.

Based on their structure, there are 3 types of occupational health services; these are emergency/urgent patient department, free standing clinic and networking of clinic.

From the point of ownership or base of the service, occupational health services are grouped according to within company, inter enterprise, branch specific, private, hospital base, primary health care, and university based.

Department of Community Medicine, School of Medicine University of Indonesia has 2 clinics in Bungur district and Kaya Putih district. Two clinics have function as a place for medical student clerkships and also for community health service. Both of them using the family and occupational medicine approaches.

The occupational medicine approach system
The clinic system is:
1. Patient comes to the clinic.
2. Patient is registered.
3. Patient moves to the detection desk for measurements of blood pressure, weight, height, pulse, respiration rate, and temperature.
4. Patient moves to doctor's room for anamnезis and physical examination.
5. Doctor makes a summary of the findings and the working diagnosis and prescribes therapy for the patient.
6. Doctor makes a decision for the patient if the he should need follow up by visiting his/her home or workplace. Criteria for visiting patient are that if patient has family dysfunction, clinical diagnosis that needs follow-up, clinical
diagnosis leading to the suspect of occupation
and working environment as the causation of
the disease, and/or chronic disease.
2. Workplace visit is done to identify potential
occupational hazards, risk of occupational
accidents, and observation of the working
process.
3. Report is submitted to the doctor, based on that
the doctor makes a decision to do further
necessary matters for the patient.
4. Intervention, planning and its implementation,
are based on the doctor’s report.
5. Evaluation is carried out on both clinical and
occupational aspects.

Case Study:
Mr. K, 31 years old came to KDK clinic with colic of
right ureter one day before going to clinic. In the
detection desk the findings were blood pressure
130/90 mmHg, weight 50 kg, height 167 cm, and pulse
rate 90/minute, respiration rate 16/minute, temperature
36.5°C.

Anamnesis: colic as a pain in the back referred to
pelvis, vomited (+), no fever, no sand urine, no pain
during micturition, back pain (+) after working.
Smoking 1 pack of cigarettes per day, drinking fewer
(1.5 liter per day), he was fond of eating empying snack.
He had worked as a fried snack vendor since 10 years
ago, from 5 a.m. to 8 p.m. everyday.

Physical examination: compass normal, but looked
very sick, good nutrition, chest and lungs were normal,
liver and spleen were normal, but in the abdomen: CVA
(+ in right side.
Body discomfort: upper back (2, 8, 10, 11) and legs
(15, 17) pain +/-.

Diagnosis for this case was:
1. Right ureter colic
2. Myalgia

Family diagnosis: Could be made after home visit.

Occupational diagnosis: Could be made after
workplace visit.

The pharmacotherapy for this diagnosis was:
buscopan injection 1 ampule (intra muscular),
buscopan tablets 3 times a day and nefrolit tablets 3
times a day.

Education: Drinking water 2.5-3 liter per day,
reduction of eating empying snacks. The patient was
advised to do ENO IVP for diagnosis of possibility of
ureter stone.

After diagnosis and clinical treatment, we decided that
for this patient follow-up activities should be carried
out. We should visit the workplace too. This decision
fulfilled criteria for visits i.e. patient has family
dysfunction, or clinical diagnosis that needs follow-up,
or clinical diagnosis that may be caused by occupation
or chronic diseases. And this patient matched with
clinical diagnosis that might be caused by occupation.
In the visits anamnesis on occupation of this patient
was taken and found as presented in the table below.
### Table 1. History of occupation

<table>
<thead>
<tr>
<th>Occupation</th>
<th>Material</th>
<th>Work Place</th>
<th>Duration</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fried snack vendor by “gerobak”</td>
<td>“Kompor” by oil, Kerosen 3 l, Frying-oil 3 l, Bananas, tuber, wheat flower, cassava, “tahu”, “tempe” and “oncom”</td>
<td>On the road Kalibarat Timur V to Jl. Garuda Ujung</td>
<td>10 years</td>
</tr>
</tbody>
</table>

### Table 2. Description of the occupation

<table>
<thead>
<tr>
<th>Time</th>
<th>Material</th>
</tr>
</thead>
<tbody>
<tr>
<td>04.30 am – 06.00 am</td>
<td>Woke up in the morning, took a bath, “shalat”</td>
</tr>
<tr>
<td></td>
<td>Went to Pasar Nangka (near his house) and came back home with purchased things ± 15 kg in the plastic bag carried by hands.</td>
</tr>
<tr>
<td>06.00 – 09.30 am</td>
<td>Prepared “gerobak”, cleaned stove, filled stove with gruffin-oil, prepared powder dough, cut mixed food materials with dough and fried part of it.</td>
</tr>
<tr>
<td>09.30 am – 08.00 pm</td>
<td>Pushed “gerobak” from his house; sometimes stopped in the busy place (± 15-30 minutes), “sholat” and had breakfast. He only brought ± 1,5 liters of water to drink; he was often perspiring and held and restrained urination</td>
</tr>
<tr>
<td>08.00 – 10.00 pm</td>
<td>Returned home, cleaned his body; sometimes watched TV and then slept.</td>
</tr>
<tr>
<td>Activity</td>
<td>Physical</td>
</tr>
<tr>
<td>----------</td>
<td>----------</td>
</tr>
<tr>
<td>Went to market</td>
<td>-</td>
</tr>
<tr>
<td>Prepared &quot;genba&quot; (cleaned &quot;genba&quot; &amp; cooking tools with water &amp; soap)</td>
<td>Dust</td>
</tr>
<tr>
<td>Cleaned stove</td>
<td>Dust</td>
</tr>
<tr>
<td>Filled stove with oil</td>
<td>-</td>
</tr>
<tr>
<td>Prepared the powder dough</td>
<td>-</td>
</tr>
<tr>
<td>Cut food materials</td>
<td>-</td>
</tr>
<tr>
<td>Mixed powder dough</td>
<td>-</td>
</tr>
<tr>
<td>Fried part of food materials</td>
<td>Heat of fire</td>
</tr>
<tr>
<td>Solid food medals</td>
<td>- Bacteria, virus, dust</td>
</tr>
</tbody>
</table>


<table>
<thead>
<tr>
<th>Activity</th>
<th>Physical</th>
<th>Chemical</th>
<th>Biological</th>
<th>Ergonomic</th>
<th>Psychological</th>
<th>Health Disorder</th>
<th>Safety Risk</th>
</tr>
</thead>
<tbody>
<tr>
<td>Went to market</td>
<td>-</td>
<td>-</td>
<td>Bacteria, fungi, virus, parasite, fly</td>
<td>Carried in his hand with ≥ 15 kg weight</td>
<td>- Stress because of the price of materials were higher</td>
<td>- Menstrual</td>
<td>- Fatigue</td>
</tr>
<tr>
<td>Prepared &quot;grobuk&quot; (cleaned &quot;grobuk&quot; &amp; cooking tools with water &amp; soap)</td>
<td>Dust</td>
<td>Soap water</td>
<td>-</td>
<td>Spitting &amp; bending</td>
<td>- Stress</td>
<td>- Menstrual</td>
<td>- Fatigue</td>
</tr>
<tr>
<td>Cleared stove</td>
<td>Dust</td>
<td>Oil</td>
<td>-</td>
<td>Spitting &amp; bending</td>
<td>- Stress</td>
<td>- Menstrual</td>
<td>- Fatigue</td>
</tr>
<tr>
<td>Filled stove with oil</td>
<td>-</td>
<td>Oil</td>
<td>-</td>
<td>Spitting &amp; bending</td>
<td>- Stress</td>
<td>- Menstrual</td>
<td>- Fatigue</td>
</tr>
<tr>
<td>Prepared the powder dough</td>
<td>-</td>
<td>Powder</td>
<td>- Bacteria, fly</td>
<td>Spitting &amp; bending</td>
<td>- Stress</td>
<td>- Menstrual</td>
<td>- Fatigue</td>
</tr>
<tr>
<td>Cut food materials</td>
<td>-</td>
<td>-</td>
<td>- Bacteria, fly</td>
<td>- Spitting and bending</td>
<td>- Stress</td>
<td>- Menstrual</td>
<td>- Fatigue</td>
</tr>
<tr>
<td>Mixed powder dough</td>
<td>-</td>
<td>-</td>
<td>- Bacteria, fly</td>
<td>- The hands mixed the powder dough</td>
<td>- Stress</td>
<td>- Menstrual</td>
<td>- Fatigue</td>
</tr>
<tr>
<td>Fried part of food materials</td>
<td>Heat of fire</td>
<td>Smoke of stove</td>
<td>- Bacteria, fly, fungus</td>
<td>- Right hand climbed and involved</td>
<td>- Stress</td>
<td>- Menstrual</td>
<td>- Fatigue</td>
</tr>
<tr>
<td>Solid food residues</td>
<td>Sunlight</td>
<td>Heat of fire, noise, dust</td>
<td>- Bacteria, fungus, virus, parasite, fly</td>
<td>- Standing position &amp; walking for long duration</td>
<td>- Pneumonia due to &quot;grobuk&quot;</td>
<td>- Stress because of not sold</td>
<td>- Fatigue</td>
</tr>
</tbody>
</table>

24
<table>
<thead>
<tr>
<th>No</th>
<th>Problem</th>
<th>Treatment</th>
<th>Evaluation</th>
</tr>
</thead>
</table>
| 1  | Colic pain intermittent e.c. suspect kidney stone | - Buscopan injection i.m. (1 ampule)  
- Buscopan tablets (3 x 1)  
- Nefrolit capsules (2 x 1)  
- Enakur tablets (3 x 1) a.c.  
- Education  
- Drinking a lot of water (2,3 – 3 1/day)  
- Not restraining the urine  
- Not eating “empiņ” snack  
- BNO & USG abdomen | Indication:  
- No pain again (because of colic pain) |
| 2  | Colic pain intermittent e.c. suspect kidney stone because of heat from frying and sunshine | - Selling in a shaded place  
- Using umbrella or wearing hat  
- Wearing skirt absorbing sweat  
- Keeping good distance from stove | Evaluation: anamnesis |
| 3  | Ergonomic potential hazards                   | - Changing squatting position to sitting on chair  
- Sitting if no buyers  
- Performing light physical exercises before work  
- Alternating standing and sitting positions  
- Avoiding too many repetitive exercises | Evaluation: anamnesis |
| 4  | Physical potential hazards                    | - Avoiding exposures to dusty places  
- Good distance from stove when frying | Evaluation: anamnesis |
| 5  | Chemical potential hazards                    | - Cleaning oil with water & soap regularly  
- Washing hands with water & soap  
- Avoiding generation of dust form powders  
- Avoiding motor vehicles | Evaluation: anamnesis |
| 6  | Biological potential hazards                  | Keeping good personal hygiene & work place sanitation | Evaluation: anamnesis |
After home and workplace visits report was submitted to the doctor in charge who arranged interventions for the patient. Doctor’s conclusion on this case was that potential hazards of the workplace of this patient were heat stress, ergonomic aspect, exposure to dust and oil, and stress at work. The occupational diagnosis was ureter colic dextra with suspect nephrolithiasis related to heat exposure and myalgia et causal lifting and handling and standing too long during working. The intervention planning such as indicated in table 4.

Evaluation
The evaluation for this patient, was:
1. Clinical aspect: colic was gone
2. Occupational aspect:
   On heat stress, the patient worked wearing head cap, and frying snacks took place with appropriate distance from stove.

   Ergonomic: worker was seated on chair after having worked several hours, light physical exercises were practiced during and after work.

   Chemical: cleaning/washing hands with water and soap after cleaning the stove.

   Biologic: personal hygiene practices.

Summary
Occupational medicine approach system can be instrumental to solve patient problems if sufficient patient occupational activities are known and analyzed for the purposes of making diagnosis, prescribing treatment and implementing further interventions. KDK clinic has implemented this principle in integration with family medicine, but only for selected cases.

This approach can be implemented in every type of health services as specified in the Basic Occupational Health Service (ILO and WHO, 2005).

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