Sample MEQ One - Delirium

An 88 year old man, living alone with no community supports, is admitted to your rehabilitation unit 5 days after an uncomplicated elective total knee joint replacement. He has a past history of hypertension.

One day after admission to your unit he is reported to have become confused and agitated.

His current medication is:
- Paracetamol 500 mg 1-2 tablets 4 hrly orally prn, or Paracetamol 500 mg / Codeine Phosphate 30 mg (Panadeine Forte) 1-2 tablets 4hrly orally prn,
- Tramadol 50 mg 1-2 tablets qid orally prn,
- Enoxaparin Sodium (Clexane) 40 mg subcutaneouslynocte,
- Indapamide 1.25 mg / Perindopril 4 mg (Coversyl Plus) 1 tablet mane.
- Sertraline 50 mg mane

Q1. What is the term commonly used for his current cognitive state?

- Acute brain syndrome, which is characterised by altered and fluctuating level of consciousness or awareness, together with disorientation and restlessness. (Background dementia may be present, although unlikely to be advanced in an 88 year old man who has been accepted as suitable for elective joint replacement surgery.)

0.5 marks

Q2. Other than sepsis, list likely medical conditions which can cause the above presentation in this scenario?

- Drug induced (Tramadol)
- Metabolic disturbance, including dehydration.
- Pulmonary thrombo-embolism
- Anaemia
- Alcohol/benzodiazepine withdrawal
- Constipation/faecal impaction
- Urinary retention
- Acute Myocardial Infarction (AMI)
- Serotonin Syndrome
- Intracerebral event

0.5 marks for any of the above 4 marks

Q3. What are 4 key areas to consider on clinical examination in this scenario?

- Cognitive assessment – Mini Mental State Examination (MMSE) or similar
- Targeted physical examination to assess cause eg chest, wound, hydration etc.
- Visual capacity
- Hearing capacity

0.5 marks each 2 marks
When you review this gentleman he appears mildly confused and lethargic. His observations are all normal. You arrange appropriate pathology and radiological investigations to help establish the underlying cause.

Q4. List 6 further appropriate medical management strategies for this patient.

- Review use of Tramadol, opiates
- Review Sertraline
- Careful sedation may be required if patient likely to harm himself.
- Ensure adequate pain control,
- Ensure hydration and nutrition.
- Treat underlying cause once established

0.5 mark for any of the above 3marks

Due to his confusion he is identified as being at high risk of falling

Q5. List 8 Nursing strategies that would be appropriate in this scenario

- Low bed
- Regular Nursing checks
- Bed in well lit area
- Bed in observed area
- Ensure spectacles worn
- Ensure glasses worn
- Regular toileting
- Personal items/ call bell in reach
- Chair / bed alarm

0.5 marks each 4 marks

His investigation results return and his biochemistry results are as follows:

<table>
<thead>
<tr>
<th>Test</th>
<th>Value</th>
<th>Normal Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>Na</td>
<td>121 mmol/l</td>
<td>(135-145)</td>
</tr>
<tr>
<td>K</td>
<td>4.6 mmol/l</td>
<td>(3.5-5.0)</td>
</tr>
<tr>
<td>Urea</td>
<td>3.4 mmol/l</td>
<td>(3.0-8.0)</td>
</tr>
<tr>
<td>Creat</td>
<td>96 mmol/l</td>
<td>(60-120)</td>
</tr>
<tr>
<td>Glucose</td>
<td>5.2 mmol/l</td>
<td>(3.0-6.0)</td>
</tr>
</tbody>
</table>

Thyroid function tests are within normal range

Q 6. What are the 2 most likely diagnoses?

1) SIADH
2) Hyponatraemia secondary to Sertraline

0.5 marks each 1 mark
Q7. List 4 abnormalities you would expect to find on further laboratory testing that would help to confirm the diagnosis

1) Urine osmolality - high > 100 mosmol/kg
2) Urine Na - high > 40 mEq/hr
3) Plasma osmolality - low < 280 mOsm/kg
4) Urea / creatinine ratio - low < 20

0.5 marks each 2 marks

Q8 List 6 intervention options you would consider to manage this condition

1) Withhold sertraline
2) Restrict water intake 700 – 1000 ml/day
3) Add salt to diet
4) Consider isotonic saline
5) Consider frusemide
6) Vasopressin if these fail

0.5 marks each 3 marks

Q9. Why is the rate at which his electrolytes are normalised significant?

Central pontinemyelinosis may occur if correction of hyponatraemia is too rapid esp. if chronic

0.5 marks

Total 20 marks
Mr D.S. is a 69 year old single man who has been referred to your out patient rehabilitation clinic with a three month history of bilateral pain and swelling in his metacarpophalyngeal and proximal interphalyngeal joints. He also reports joint stiffness in the mornings which usually lasts for one to two hours. He has been fatigued and has recently lost five kilograms in weight. Clinically you suspect he has rheumatoid arthritis.

Q 1) List the six (6) most likely differential diagnoses other than rheumatoid arthritis

Connective tissue disease  
Infection related polyarthritis  
Spondyloarthropathies  
Osteoarthritis  
Gout  
Psoriasis  
Paraneoplastic disease

0.25 marks each 1.5 marks

Q 2) List eight (8) manifestations of rheumatoid arthritis that may occur in the hands other than pain and swelling of the joints.

Carpel Tunnel Syndrome  
Ulnar deviation of the MCP  
Volar subluxation of digits and wrist  
Boutonniere flexion deformity of PIP  
Swan neck deformity – hyperextension PIP and flexion DIP  
Stretching/rupture of extensor tendons  
Rheumatoid nodules  
Vasculitis  
Z deformity thumb

0.25 marks each 2 marks
Q 3) List four (4) investigation results which would indicate a poor prognosis in rheumatoid arthritis.

Rheumatoid factor positive
CRP/ESR elevated
CCP antibody positive
FBE – low Hb,
X rays – erosions around joints

0.5 marks each 2 marks

Q 4) List four (4) clinical indicators of a poor prognosis in rheumatoid arthritis.

Greater than 10 swollen joints
Proximal joint involvement
Moderate to severe joint pain
Morning stiffness lasting over 1 hour
Significant fatigue
Systemic involvement eg vasculitis

0.5 marks each 2 marks

Mr D. S.’s rheumatologist has discussed treatment options with him and Mr D.S.. now asks you about potential side effects of these medications.

Q 5 ) List six (6) significant side effects of non-steroidal anti-inflammatory medications other than rash.

Gastric ulceration
Coronary thrombosis or stroke due to decreased platelet inhibition
Fluid retention / oedema /CCF /Hypertension
Renal toxicity
CNS headache, dizziness
Asthma / hypersensitivity

0.25 marks each 1.5 marks

Q 6) List six (6) significant side effects of methotrexate

Ulcerative stomatitis
Hepatic toxicity
Skin reactions
Fever
Pulmonary disease
Bone marrow suppression
Lymphoma
CNS effects
Opportunistic infections

0.25 marks each 1.5 marks
Q 7) Other than methotrexate, list four (4) disease modifying agents that are commonly used in rheumatoid arthritis at present.

Hydroxychloroquine  
Sulphasalazine  
D- penicillamine  
Infliximab  
Etanercept  
Abatacept  
Adalimumab  
Rutiximab

0.5 marks 2 marks

Three months later Mr D.S. returns to your clinic with a hot and swollen wrist which has been present for two weeks. He has just been seen by his rheumatologist who excluded infection and performed an intra-articular injection of steroid into his wrist joint. He also increased his dose of methotrexate.

Q 8) List the five (5) main aims of the rehabilitation plan you would provide for Mr D.S. at this point.

Settle flare / control synovitis  
Pain management  
Joint protection from structural damage  
Maintenance ROM joint  
Maintenance independence ADL

0.5 marks each 2.5 marks

Q 9) List ten (10) key components to the program you and your interdisciplinary rehabilitation team would provide for a patient with rheumatoid arthritis.

Optimal medical management  
Optimal acute pain control medications  
Physical modalities eg heat, cold,
Avoid passive ROM joint / Active assisted ROM regime
Avoid overuse other joints
Joint protection by splinting
Functional orthotic / splint by day

Provision of aids and appliances
Provision of services / respite
Energy conservation strategies

Link with Rheumatoid support group
Patient self-management education
Psychological support
pain management strategies eg relaxation

0.5 marks each 5 marks

Total / 20 marks