UNIVERSITY OF PÉCS
MEDICAL SCHOOL

End of life care

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2021 spring semester.

Patient's history

Mr. Jacob 81 year old male patient – retired bus driver

Past medical history:

High blood pressure 20 yrs – not well controlled due to poor compliance

Type II diabetes 5 yrs, not well controlled

Noise induced hard of hearing

April 2014 – acute kidney failure due the urinary retention, TURP surgery, histology: prostate adenocarcinoma staging**: disease confined to the prostate, refused further treatment**

Dec 2014 – painful ulcers on both lower legs, posterior aspect, self-treated with special dressings, good arterial flow were confirmed in pedal pulses bilaterally, further investigations refused by patient

Medication history

- metformin 1000 mg BD (bis die) – taken occasionally
- valsartan 160 mg OD (omne in die)
- diclofenac 100 PRN (pro re nata) ulcer pain

- NKDA (not known drug allergy)

Consultation on 15/Jan/2015

C/O - ulcers causing pain both sides, pain scale 5-6/10

O/E – good vital signs incl. B/S, RT lower 4x3 cm infected looking ulcer, LT lower leg 5x4 cm infected looking deep ulcers

Good pedal pulses with handheld doppler, feet felt warm on exam, no diffuse swelling or discolouration noted

What would you do? Management plan 1.

- with the pain

- with the ulcer

- with the infection

What I did

- commenced TRAMADOL 50-100 mg TID (ter in die)
- Bisacodyl (Dulcolax) 5 mg nocte
- NAPROXEN 550 mg BD
- stop DICLOFENAC
- LT sided ulcer swabbed and sent for microscopy and culture, then dressed with iodine based dressing
- referred him to ulcer clinic (Dept. of Dermatology) for second opinion

Secondary care outcome

- continue with same type of dressing
- reviewed by a vascular surgeon who requested a DSA (digital substarction angiography) of the lower limbs –

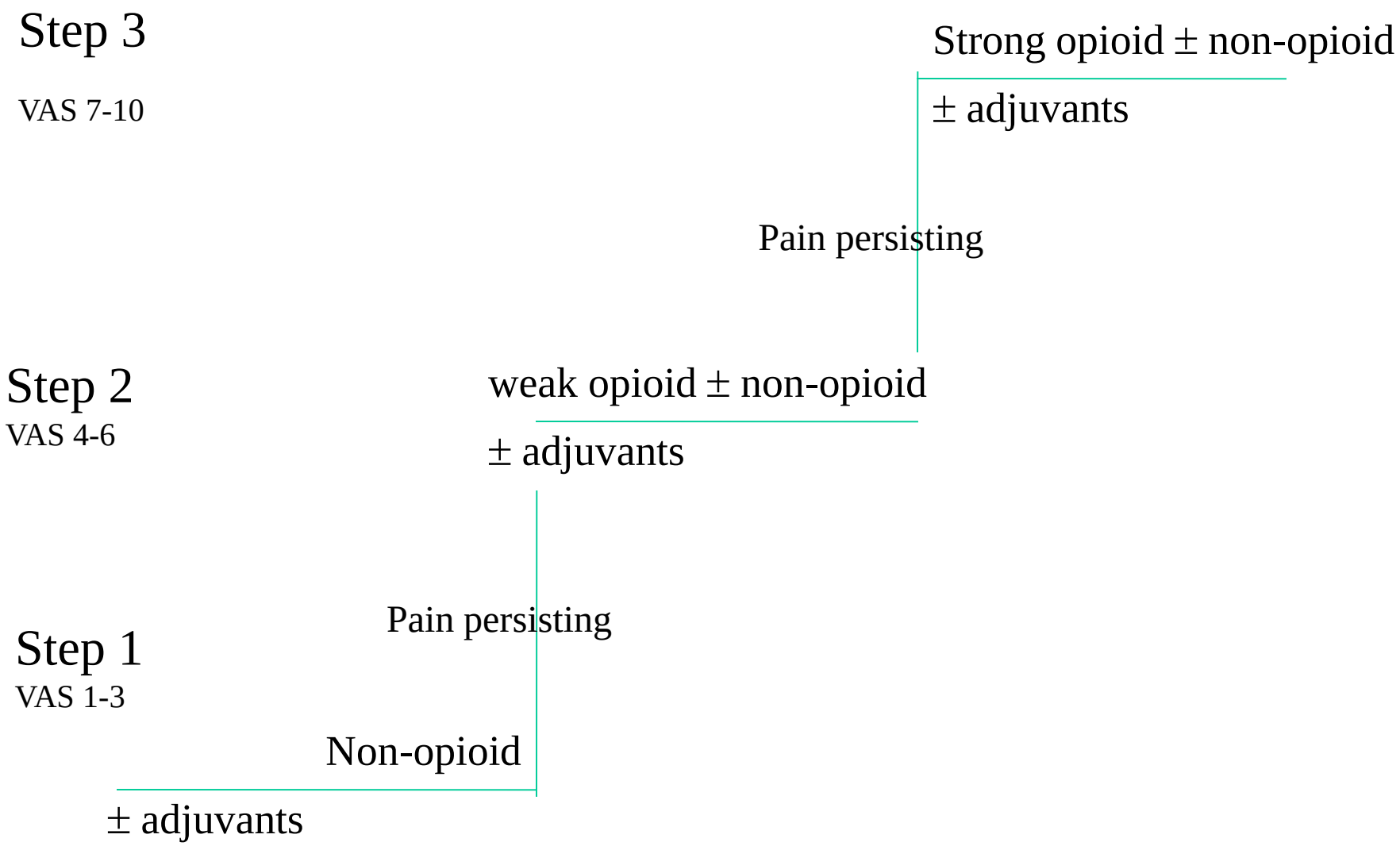
bilateral occlusion posterior tibial arteries bilateral segmentally stenotic anterior tibial arteries,

Diagnosis: Severe diabetic angiopathy, no surgical intervention is possible

Secondary care outcome

- admission to 2nd Dept of Medicine for vasoactive treatment (prostaglandins - alprostadil)
- abdominal U/S then abdo CT scan revealed a **large mass at the hepatic flexure and probable metastasis in the liver, paraaortic enlarged lymph nodes**
- no prostaglandin was given due to the strongly suspected malignant tumor
- patient refused further investigations (colonoscopy) and requested to be discharged (25/March/2015)

Principles of pain management



1st step

- Paracetamol – max dose 1000 mg 8 hourly

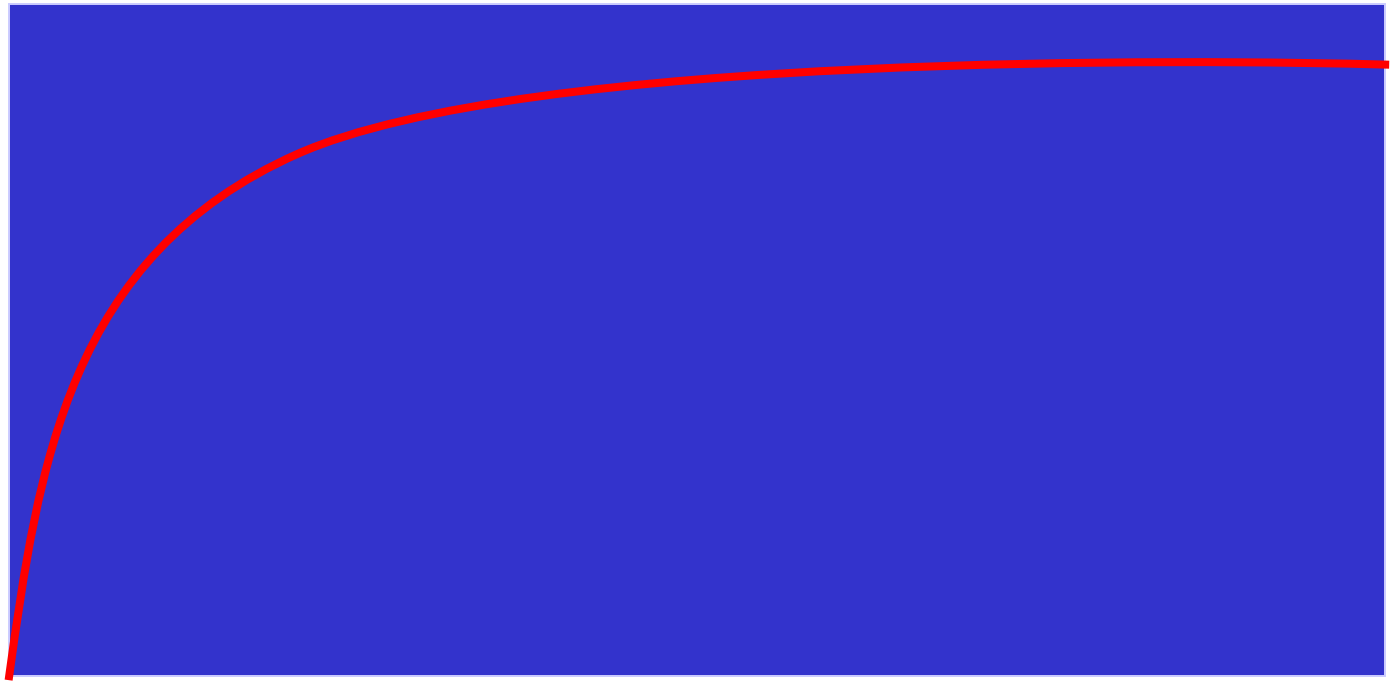
- Metimazole – max dose 1000 mg 6 hourly

- Ibuprofen – max dose 800 mg 6 hourly

- NSAID – naproxen, aceclofenac, meloxicam, etericoxib

CONTRAINDICATIONS!!!

Dose effect curve
(paracetamol, NSAID and weak opioids)



2nd step

- **tramadol** daily max 400 mg, norepinefrin és serotonin reuptake inhibition
- **dihidrocodein** daily max 240 mg
- **codein** daily max 180 mg

Home visit on 29/Jan/2015

C/O reported by daughter: did not tolerate TRAMADOL not even 100 mg BD, caused dizziness, did not take NAPROXEN - no reason why, took leftover DICLOFENAC instead 50-100 mg BD/TID PRN - no GI side effects, pain has been 5-6/10 on this, worse in lying position, better sitting or standing, ulcers dressed as ordered, **drinks a lot, some confusion, weakness, constipated**

O/E 160/90, 80/min, B/S after lunch 11.4 mmol/l, 36.7C, sat O2 on R/A 98%, LT sided leg ulcer is 7x4 Swab report enclosed

What would you do? - management plan 2.

- What may be causing this presentation?
- Pain management?

What I did

- Took blood chemistry
- Commenced him on Fentanyl patch 25 µg/hour

Lab results

- Se Ca 3.35 mmol/l, ionized Ca 1.55 mmol/l
- GFR 55 mml/min,
- FBC, LFT’s all normal
- CRP 55 mg/l

Hypercalcaemia – definition – symptoms

- Calcium normal range 2.15-2.6 mmol/l, mild <3.0, moderate 3.0-3.5 severe 3.5<
- Ionized calcium normal range 1.05-1.3 mmol/l

- Polyuria-polydipsia
- Anorexia-nausea-vomiting
- Constipation
- Muscle weakness
- Decreased concentration-confusion

Hypercalcaemia – causes

- Malignant tumor – osteolytic bone mets (breast, lung, renal, multiple myeloma, prostate)

Hypercalcaemia - treatment

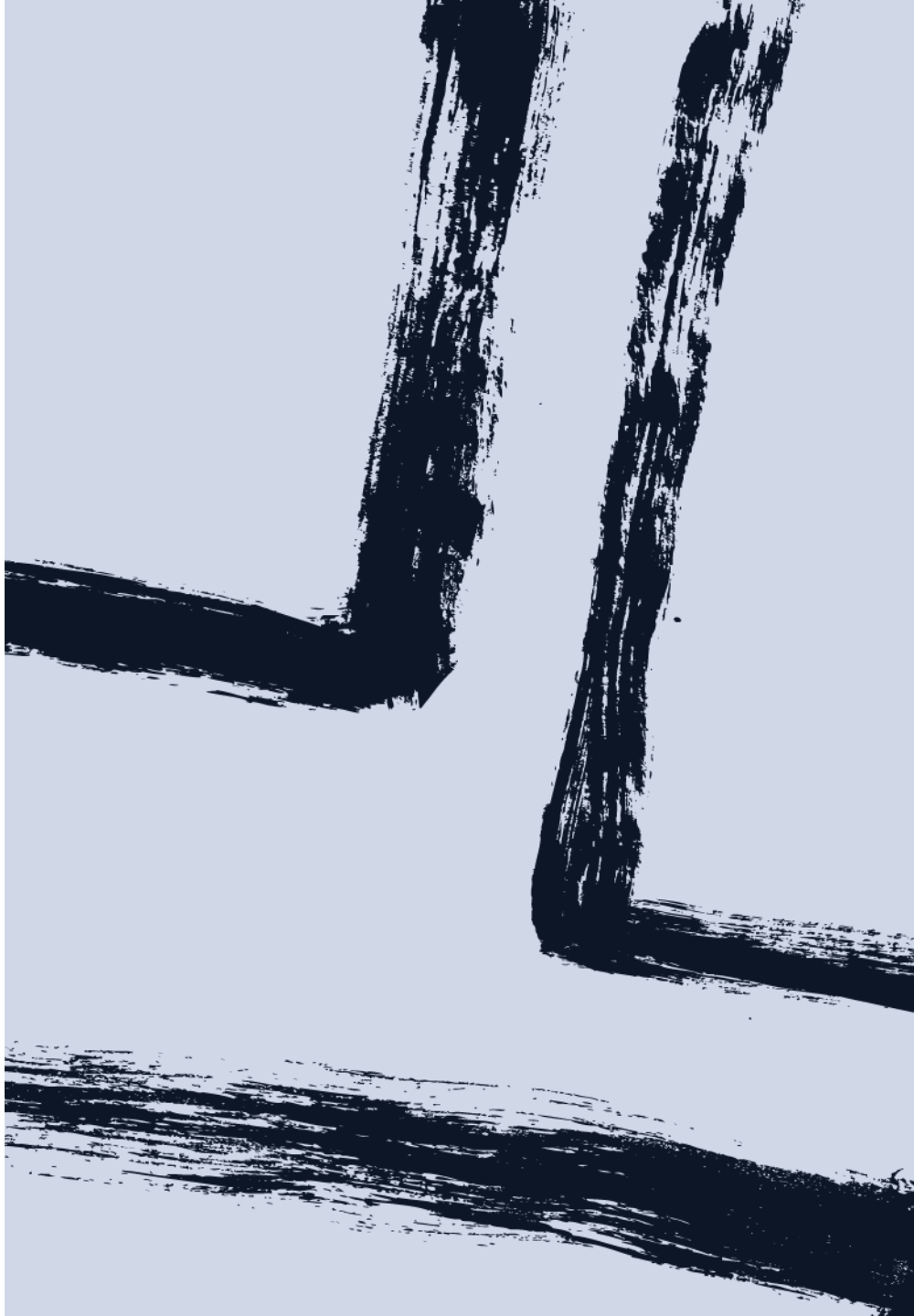
- Normal saline infusion – effective within hours
- **Salmon calcitonin** – effective within 12-48 hours
- **Bisphosphonates (Zolendronic acid) in good renal function** – effective within 2-4 days
- Denosumab in impaired renal function – effective with 2-3 days
- Avoid calcium containing food and Vit-D supplements
- Cancer treatment if possible

Review 2/Feb/2015

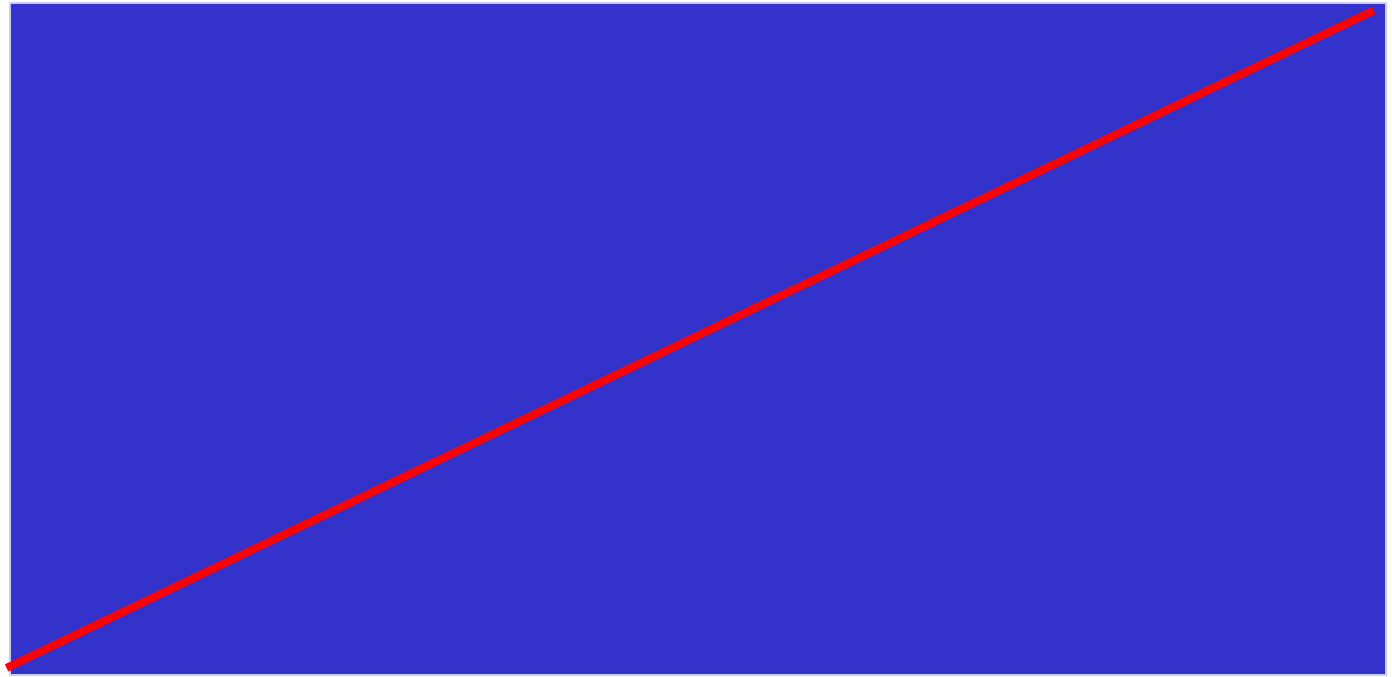
- Serum Ca 3.35 mmol/l, GFR 55 mL/min/1.73 m^2

Dx: Hypercalcaemia

Tx: Salmon calcitonin 200 IU in two doses the Zolendronic acid 4 mg infusion was given 3-4 weekly depending on the response



Dose effect curve
(strong opioids)



3rd step

- morphine - gold standard – starting daily dose 20-30 mg (1200 mg)
- oxicodon – starting daily dose 10-20 mg (640 mg)
- hidromorphon – starting daily dose 4-8 mg (256 mg)
- fentanyl – starting dose 12-25 µg/hour (1200 µg/hour)
- tapentadol – daily max dose 600 mg

Home visit on 4/April/2015

C/O severe bilateral leg pain 7-8/10 x2/7, nausea and occasional vomiting, sleeps in the armchair, daughter reports frequent agitated-paranoid periods, often refuses medications

O/E vital signs normal, 8x7 cm deep ulcers on both lower legs posterior aspect, abdominal exam is normal, mental assessment reveals paranoid thoughts - „ulcers were caused by IV drip which were given during the prostate surgery last year”

What would you do? - management plan 3.

- pain management

- psychiatric symptoms

What I did

- increased FENTANYL patch to 50 µg/hour, to be replaced 72 hourly
- DICLOFENAC slow release 75 mg BD
- commenced him on PANTOPRASOL 20 mg BD
- commenced him on QUETIAPINE 25 mg TID
- detailed information given about possible surgical intervention – crural amputation of both legs – refused („doctor I will live and die with two legs”)

Telephone consultation with patient's daughter on 11/April/2015

- agitation/paranoid periods have settled
- nausea/vomiting eased off
- leg pain well controlled only in the first 48 hours after FENTANYL patch replaced
  - Pain in the first two days 2-3/10
  - 3rd day until replacement 5-6/10

What would you do? - management plan 4.

- how would you adjust his pain management?

What I did

- FENTANYL 50 µg/hour patch to be replaced 48 hourly

Home visit on 25/April/2015

C/O Severe episodes of breakthrough pain last night, patient was cruising in the house all night, saying that he wanted to hang himself

O/E alert, oriented, normal vital signs, deep ulcers 15x10 cm both lower legs

What would you do? - management plan 5.

How would you manage the pain?

What I did

- FENTANYL dose increased to 75 µg/hour
- LACTULOSE increased to 10 mls BD
- Oral MORPHIN solution 10 mg/ml, 2 ml to be taken in case of breakthrough pain, to be repeated hourly if necessary
- commenced him on AMITRIPTYLINE 12,5 mg nocte to be uptitrated to 25 mg after 3/7

Telephone advice to daughter on 26/April/2015

- pain well controlled, 2-3/10, 3 oral MORPHIN doses in the last 24 hours
- severe nausea especially after the oral MORPHIN

What would you do? - management plan 6.

- how would you adjust his pain management?

- how would you manage the nausea?

What I did

- FENTANYL dose increased to 100 µg/hour
- Discontinued QUETIAPINE, started Haloperidol 2.5 mg BD prn.

Nausea &vomiting

Causes

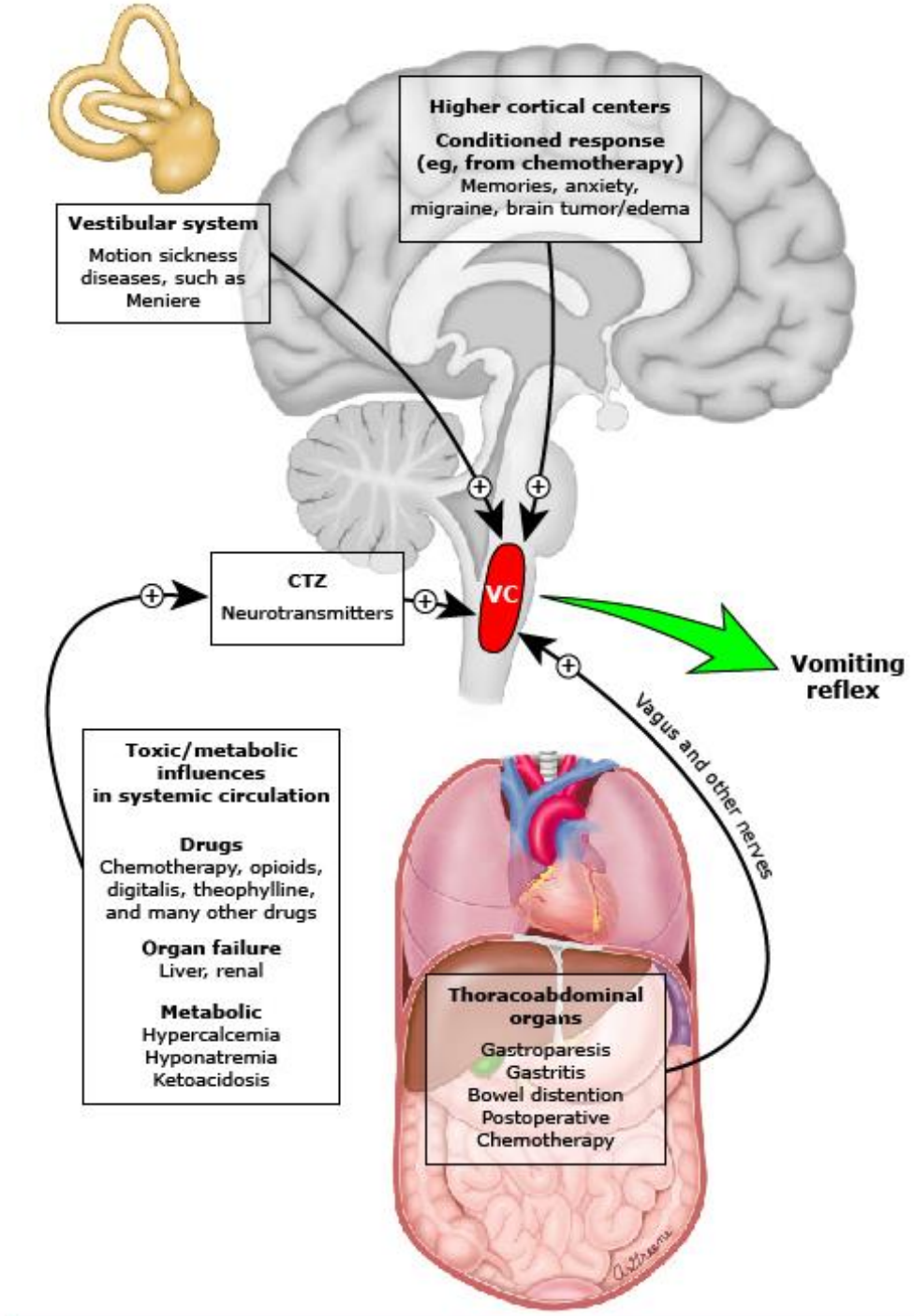
Common causes of nausea and vomiting in palliative care

Toxic/metabolic	Disorders of viscera	CNS causes
Drugs	**Obstruction**	**Increased intracranial pressure**
Cytotoxic chemotherapy	Gastric outlet	Malignancy
Opioids, tramadol	Small bowel	Hemorrhage
NSAIDs, aspirin	Biliary/pancreatic duct	Cranial irradiation
Digitalis	**Hepatomegaly**	Abscess
Iron	**Severe constipation**	**Meningeal infiltration**
Antibiotics	**Gastroparesis**	**Vestibular**
Theophylline	**Inflammation/irritation**	Drug effects
SSRIs and bupropion	NSAID	Labyrinthitis
Anticonvulsants	Chemotherapy (direct gastrointestinal effects)	**Anxiety**
Many other drugs	Radiation	Anticipatory nausea and vomiting
Organ failure	Gastritis	**Pain**
Liver, renal	Gastroenteritis	
Metabolic	Hepatitis	
Hypercalcemia	Cholecystitis	
Hyponatremia	Pancreatitis	
Ketoacidosis	**Tumors of the gastrointestinal tract and thorax**	
Poisoning, substance abuse	**Ascites**	

NSAIDs: nonsteroidal antiinflammatory drugs; SSRI: selective serotonin reuptake inhibitor; CNS: central nervous system.

Nausea &vomiting

Pathopysiology



Nausea&vomiting treatment

- **No definite etiology** (not related to chemotherapy or radiation, constipation, central nervous system disease, metabolic abnormalities/drugs, or bowel obstruction)

First line: Metoclopramide 4-8 hourly, maximum daily dose 60-120 mg

Second line: add 5HT3 antagonist (eg. ondansetron)

or **switch** to dopamin receptor antagonist

(eg. chlorpromazine, haloperidol, olanzepine)

Nausea&vomiting treatment

Chemotherapy-induced nausea and vomiting (CINV) & Radiation therapy-induced nausea and vomiting

5HT3 receptor antagonist - granisetron, ondansetron, palonosetron and Dexamethasone

Opiate induced

D2 receptor antagonist eg haloperidol, chlorpromazine, olanzepine, metoclopramide

Nausea&vomiting treatment

Nausea due to intracranial malignancy (primary or secondary brain tumor)

Dexamethasone

Gastroparesis

Metoclopramide

Bowel obstruction

Haloperidol, Hyoscine (scopolamine) Dexamethasone, Octreotide

Home visit on 14/May/2015

Confined to bed, pain 5-6/10, not able to eat, drinks very little, not able to swallow his tablets since yesterday, agitated, visual hallucinations, no urine output

O/E ulcers increased in size and depth, B/P 90/60, pulse 90/min, moderately dehydrated, anxiety obvious („ doctor I know that I'm gonna die and I thought I can cope with it but I didn’t think it was so difficult”)

What would you do? Management plan 7.

- pain control

- symptom control

- route of administration of medications

What I did

- FENTANYL patch dose increased to 125 µg/hour 48 hourly
- DIAZEPAM 5-10 mg IM 8 hourly to treat anxiety
- HYOSCINE (Buscopan) 20 mg IM 8 hourly to decrease secretion of saliva to prevent death rattle
- HALPERIDOL 2.5mg IM 12 hourly to treat agitation

Telephone advice twice daily in order to adjust the doses

Syringe driver

Last hours of life
Signs of the dying process

Altered level of consciousness

Tachycardia

Abnormal breathing patterns

Loss of swallow/gag

Oral/tracheal secretions

Oliguria/anuria

Cyanosis

Peripheral cooling

Venous pooling/mottling

Loss of sphincter control

Mr JB passed away peacefully on 16/May/2015

R.I.P

The outcome depends on…

…YOUR ATTITUDE

…your knowledge

- ENJOY THE REST OF YOUR DAY