Chemotherapy versus immunotherapy chalk talk

Scenario 1

A 65 year old man underwent a right hemicolectomy for a colonic carcinoma and was currently receiving his first cycle of adjuvant chemotherapy using capecitabine. He was admitted to the oncology admissions unit with diarrhoea 8 times in the past 24 hours, sore mouth and red painful hands.

1. What is the differential diagnosis for his presentation?

Capecitabine toxicity (grade 3 diarrhoea, PPE, oral mucositis); infectious diarrhoeal illness; leak likely first presentation of inflammatory colitis

2. Outline your initial management

ABCDE, observations, IV access, bloods, intravenous fluids, loperamide 4mg qds, moisturising cream, saline mouthwash, analgesia (paracetamol, codeine, oramorph PRN), stool cultures, stop capecitabine, senior review as grade 3 toxicity.

He is commenced on loperamide, intravenous fluids, analgesia, mouthwash and moisturising cream but the following day develops central chest pain and breathlessness.

3. What is the potential cause for his new symptoms?

Capecitabine induced cardiac chest pain (angina, myocardial infarction); pleuritic (pneumonia, PE, effusion), musculo-skeletal.

4. Outline your approach to managing this

ABCDE, oxygen as required, ECG, GTN spray if cardiac-sounding pain, analgesia (morphine/metoclopramide), bloods including cardiac markers, CXR, senior review, CTPA if PE suspected, liaise with cardiology if cardiac cause suspected

Lesson- different chemotherapy drugs have different side effects. Capecitabine/5FU may cause life threatening diarrhoea and can cause cardiac toxicities. **Capecitabine is a tablet- patients may continue to take the drug as an inpatient from their own supplies if not told to stop!** Any patient admitted acutely to JONA with any acute illness must be as a default advised to stop oral chemotherapy unless otherwise advised by senior clinician.

Common side effects of many chemotherapy agents include: myelosupression, diarrhoea, mucositis, arteriothrombotic tendencies, deranged LFTs.

MYELOSUPRESSION: Most commonly nadir of myelosupression approx 2 weeks post chemotherapy, followed by recovery.

Methotrexate causes early myelosupression - approx 5 days and

Mitomycin C (used in anal and bladder cancer) causes delayed myelosupression up to 2 months afte

Other chemotherapy side effects include

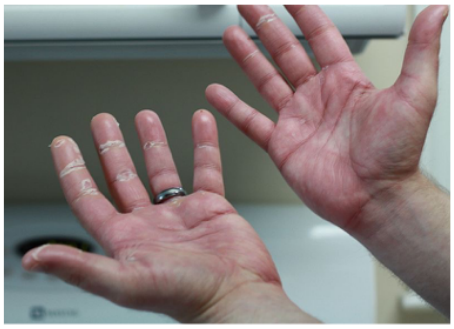
PPE (palmoplantar erythrodesthesia or erythema/blistering/peeling of palms and soles. Common with Capecitabine)

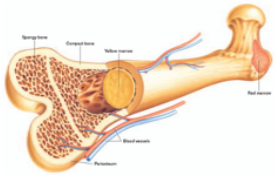
Renal injury, SIADH (cisplatin, ifosfamide, vincas)

Encephalopathy (ifosfamide, capecitabine, 5FU)

Pneumonitis (bleomycin, gemcitabine, cylcophosphamide)

Haemorrhagic cystitis - seen with ifosfamide and cylcophosphamide. Treat with mesna as per guidelines (call SpR + pharmacy in real life)





Bone marrow: Myelosupression

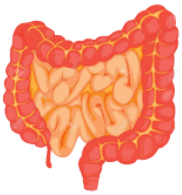
Skin/hair: Rash, alopecia
palmo-plantar erythrodysesthesia

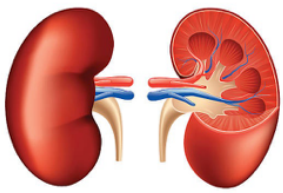
CVS: Arrythmia, MI
arterio-thrombotic events

COMMON TOXICITIES

GI: Diarrhoea, mucositis,
Deranged LFT
Chemo induced N&V

Renal: AKI, renal salt wasting





Scenario 2

A 48 year old lady with metastatic melanoma had recently received cycle 3 of ipilimumab and nivolumab and presented with 10 days of fatigue, malaise and dehydration.

1. What is the differential diagnosis for her presentation?

Immunotherapy toxicity (autoimmune diabetes mellitus, hypopituitarism, hypoadrenalism); infection; disease progression of melanoma; other drug induced side effects

2. Outline your initial management

ABCDE, IV access, IV fluids, bloods including glucose, septic screen

3. What specific blood tests would you consider?

Glucose, 9am cortisol, TFTs, FSH/LH

Blood glucose comes back at 25. What would you do now?

Check urine/blood ketones and ABG for pH, assess for DKA and start protocol if appropriate, ask for endocrinology/diabetes review, send islet cell autoantibodies.

Lesson- immunotherapies are essentially therapies that activate the immune system and this response is used to target cancer cell. They may cause autoimmune-esque toxicities against normal cells including colitis, hepatitis, nephritis, pneumonitis, thyroiditis, skin toxicities, diabetes mellitus, hypopituitarism and hypoadrenalism. Non-endocrine toxicities are managed with steroids as per ESMO guidelines (oral prednisolone versus intravenous steroids depending on grade of toxicity) while endocrine toxicities are usually managed with hormone replacement.

See attached ESMO guidelines.