Management of complications and side-effects of myeloma

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### Common problems in myeloma

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Myeloma bone disease

• Most common and often most debilitating feature of myeloma - affects the majority of patients at some point

• 70 – 80% of patients have evidence of bone disease at diagnosis

  • Bone pain
  • Lytic lesions
  • Osteoporosis
  • Fractures
  • High blood calcium
Normal bone remodelling

Bone breakdown = new bone formation
Bone cell activity in myeloma

Bone breakdown exceeds new bone formation
Consequences of increased bone breakdown

High calcium (hypercalcaemia)
- Kidney damage
- Nausea
- Tiredness
- Constipation
- Confusion

Bone pain
- Back
- Ribs
- Hips
- Long bones of arms and legs

Fractures
- Weakened bones
- Pathological fractures
- Pain
- Loss of height
Hypercalcemia

• Sign of increasing bone deterioration

• Calcium build-up in the blood can be serious (kidney damage, abnormal heart rhythms)

• Prompt bisphosphonate treatment reduces or prevents hypercalcaemia

• Other supportive treatments:
  Adequate hydration
  Steroids
Treating myeloma bone disease

- Non-medical treatments
- Surgery (PV, BK)
- Radiotherapy
- Bisphosphonates
- Pain relief

Treating the myeloma
Bisphosphonates – the ‘bone strengtheners’

- Anyone receiving myeloma treatment should be on a bisphosphonate whether they have myeloma bone disease or not

- Several types:
  - Zometa® (zoledronic acid)
    monthly infusion lasting ~15 min
  - Aredia® (pamidronate)
    monthly infusion lasting ~90 min
  - Bonefos®, Loron® (clodronate)
    daily tablets
Side-effects of bisphosphonates

• Flu-like symptoms, achy bones

• Nausea

• Gut disturbances

• Osteonecrosis of the jaw
  (maintain good mouth hygiene, regular dental check-up)

• Impaired kidney function
  (maintain high fluid intake)
Radiotherapy

• Treats localised bone damage or pain
• Relieves pressure on spine
• Provides rapid pain relief

Side-effects:
• Nausea and vomiting
• Diarrhoea
• Skin reactions
• Fatigue
Surgical interventions

Percutaneous Vertebroplasty

Painful vertebral compression fracture
Guided injection of bone cement
Stabilised vertebral structure

Minimally-invasive procedure – side-effects rare
Surgical interventions

Balloon Kyphoplasty

Vertebral compression fracture
Insertion and inflation of balloon
Cavity filled with bone cement. Stabilises and restores height

Minimally-invasive procedure - side-effects rare
Anaemia –
Low red blood cells

Two out of three patients will have anaemia at some point.

Caused by:
• Too many myeloma cells reducing normal bone marrow

• Kidneys not making enough EPO (red cell hormone)

• Marrow suppressive treatment (chemotherapy)
Anaemia

Symptoms:

- Fatigue, low energy level
- Shortness of breath, chest pain with activity
- Pale appearance

Improves with response to myeloma treatment but can be managed with:

- Blood transfusions
- Erythropoetin (EPO)
- Reducing the doses of myeloma treatment
Infections

Increased risk of infection because of lowered immune system due to:

- Myeloma cells suppressing the production of white blood cells in the bone marrow
- Side-effect of treatment – reduction in neutrophils

Symptoms:

- Raised temperature; shivering; general feeling of being unwell; cough, sore throat; diarrhoea; pain, swelling or redness in any area.
Infections - Management

• Prophylactic treatment with antibiotics, anti-virals, anti-fungals

• Report signs of infection, fevers etc promptly to your doctor

• Keep up-to-date with vaccinations i.e. flu and pneumonia jabs

• Reduction in doses of myeloma treatment

• G-CSF injections to increase white blood cell count
Fatigue

Causes:
- Myeloma treatments
- Myeloma itself
- Psychological effects
- Diet
- Thyroid function

Symptoms:
- Feeling tired all the time
- ‘Waking up tired’
- ‘Too tired to think straight’
Coping with fatigue

- Plan your day
- Balance activities with rest
- Delegate tasks to others
- Prioritise
- Take gentle exercise – good for combating chronic fatigue
- Well balanced diet
- A diary may be helpful
- **TELL YOUR DOCTOR OR NURSE** how it affects you
Kidney (renal) problems

Can affect up to 40% of patients. Causes of kidney problems include:

- Myeloma kidney – light chain build-up in kidney tubules are also toxic and cause blockages
- Contributing factors – dehydration, high calcium, infections
- Side-effects of treatments – chemotherapy, NSAIDs, antibiotics, bisphosphonates
Kidney problems

Symptoms may include:

- Swollen ankles, hands and feet because of fluid retention
- Shortness of breath
- Tiredness
- Nausea
- Reduction in urine output
- Blood or protein in urine

Greatest impact of kidney problems is on the choice and dose of myeloma treatments.
Kidney problems - Management

Can be reversible if managed and controlled early

- Treating the myeloma
- Reducing calcium levels
- Keeping well hydrated
- Careful use of drugs
- Dialysis may be needed for some patients
Peripheral neuropathy

Damage to the nerves, especially hands, arms, legs and feet.

Caused by:

• Side-effect of treatment e.g. thalidomide, Velcade, vincristine
• Paraprotein depositing on and damaging the nerves

Symptoms:

• Tingling, ‘pins and needles’
• Altered sensitivity, numbness
• Pain
Peripheral neuropathy
- Management

No standard treatment – managed on an individual basis

• Neuropathic pain-relief e.g gabapentin, amitriptyline, pregabalin
• Nutritional supplements, massage, heat/cold packs
• Important to report any signs as soon as possible
• Reduce the dose or frequency of treatment
Reducing complications and side-effects

• Early diagnosis is key to preventing complications

• Take preventative measures wherever possible

• Comply with the prescribed treatment

• Report any side-effects as soon as possible
The future

• New treatments being developed
  – more targeted, fewer side-effects

• Different ways of administering treatment
  e.g. smaller doses, different route of delivery

• Better supportive/preventive treatment and care
For information:

www.myeloma.org.uk

Infoline: 0800 980 3332