Suspected neutropenic sepsis during chemotherapy is a medical emergency

Diagnosis

- Neutropenia (≤0.5x10^9/l)
- Temperature >38°C
- Other symptoms or signs of significant sepsis such as:
  - > systolic blood pressure <90 mmHg
  - > heart rate >130 bpm
  - > respiratory rate >25/min
  - > sats <91% or lactate >2
  - > purpuric rash
  - > reduced responsiveness

Investigations

- Urgent FBC, U&E, LFTs, CRP and lactate.
- Send peripheral blood cultures (and central blood cultures if an *in situ* device is accessible).
- Send urine sample in children under 5 years.

Avoid

- Do not request a chest X-ray unless clinically indicated.
- Do not remove a central venous access device.
- Do not use glycopeptide (eg vancomycin or teicoplanin) or aminoglycoside (eg gentamicin) antibiotics without specific microbiological reasons.
- Do not give GCS-F prophylactically unless part of the current chemotherapy regimen.

Management

- Start piperacillin and tazobactam (Tazocin) immediately unless contraindicated.
- Ask for experienced senior assistance.

Prophylaxis in adults (>18 years)

- If neutropenia is anticipated in response to chemotherapy, consider fluoroquinolone (eg ciprofloxacin) prophylaxis (depending on local microbiological sensitivities).

Fig 1. Revised protocol. CRP = C-reactive protein; FBC = full blood count; GCS-F = granulocyte-colony stimulating factor; LFTs = liver function tests; U&E = urea & electrolytes.

Reference

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Communication is key

Editor – Protocols are increasingly important in clinical practice. They are the fingerprint, the biometric, the iris recognition of evidence-based medicine. In the article 'Neutropenic sepsis: a potentially life-threatening complication of chemotherapy' (*Clin Med* 2014;14:538–42), the authors reproduce an algorithm from NICE guidelines [CG151]. The original NICE version contains poorly sequenced, disorganised, repetitive and often self-evident copy. In adapting this original for printing in the journal, *Clinical Medicine* staff have exacerbated these problems by introducing dominant, asymmetrical colour bars that draw the eye away from a spatter of five-point text that is far too small to see comfortably, while typographical errors (eg Examiniation and spectic) and script that breaches the edge of densely coloured boxes further reduce clarity.

If communication is key and timely intervention critical, why is so little care taken by the National Institute of Health and Care Excellence and others to incorporate even the most basic elements of graphic design?

Not very much is missing from the following 155 words(Fig 1), compared with the original 461 words. ■

ANDY LEVY
Professor of endocrinology, University of Bristol
University Hospitals Bristol NHS Foundation Trust, Bristol, UK

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Steroid use for patients with brain metastases and spinal cord compression

Editor – I read with interest 'Brain metastases' (*Clin Med* 2014;14:535–7) and 'Metastatic spinal cord compression: a rare but important complication of cancer' (*Clin Med* 2014;14:542–5). I would like to make a few further points regarding the use of steroids. Spencer *et al* advise high-dose dexamethasone for patients with brain metastases, with a suggested regimen of 16 mg daily, reducing to a maintenance dose of 2–4 mg daily. Dexamethasone provides symptomatic relief for patients with raised intracranial pressure from cerebral oedema but this relief reduces over time and undesirable side effects increase. Thus, ideally, the dose of dexamethasone should be discontinued after 2–4 weeks.[1] No benefit is seen in patients with asymptomatic brain metastases.[2] Robson advises administering 16 mg dexamethasone daily if metastatic cord compression is suspected, but eventual steroid reduction is not discussed. Following radiotherapy or surgery, steroids should be tailed off gradually and completely over 4–6 weeks, or to the lowest dose that maintains stability. Corticosteroids may result in a rapid improvement of neurological function but long-term benefit is limited, and there is no evidence that survival is improved.[3] High-dose, long-duration treatment with corticosteroids causes significant side effects which can be debilitating and occasionally fatal. For those patients who do not proceed to surgery or radiotherapy, dexamethasone should be reduced gradually and stopped. We undertook an audit of the patients known to St Luke's Hospice in Plymouth in a six-month period this year (n=1,152), and found one-third of them had taken steroids. Oncologists had prescribed steroids in nearly half of cases. 20% of patients were taking steroids for brain metastases and 10% for spinal cord compression. Steroid dose was not regularly reviewed and patients often remained on steroids for far too long, resulting in 40% of patients suffering side-effects, most commonly proximal myopathy and peripheral oedema. 50% of patients were taking steroids until their death. GPs and palliative nurse specialists are often underconfident in reducing and stopping steroid courses and therefore clear guidance needs to be given to indicate duration of steroid course and plans for reduction. ■

DR FAY MURRAY-BROWN
ST4 palliative medicine, Hospiscare, Exeter, UK

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Response

Editor – My thanks to Dr Murray-Brown for raising this important issue. In my article 'Metastatic spinal cord compression: a rare but important complication of cancer' I concentrated primarily on the presentation and initial management of these cases. In the short section on rehabilitation I did not discuss the reduction of steroids and I agree that this is a very important part of the management.

In metastatic spinal cord compression patients the high dose steroids are used to reduce swelling and neurological symptoms whilst they start their definitive treatment. In our practice, once patients have commenced their fractionated radiotherapy treatment we reduce the steroids rapidly by half every two days. Most patients will have stopped taking their steroids just after their discharge on completion of radiotherapy treatment. Occasional patients require longer term treatment to control symptoms but this is kept at the lowest dose possible. If the patient deteriorates on reduction then higher doses are resumed short term to try to improve their symptoms.

I agree that patients who are not fit enough for definitive treatment, or who have received a single fraction of radiotherapy should have their steroids reduced gradually. Ideally they should be reduced gradually and then stopped over a 3–4 week period, or reduced and then maintained at the lowest possible dose at which their symptoms are controlled. ■

DR PETER ROBSON
Consultant clinical oncologist, Clatterbridge Cancer Centre Liverpool, UK