Prescribing...

December 2014

Hot Therapeutic Topics

- Increasing physical activity is recommended as initial treatment, before pharmacotherapy, for many conditions.
- Pulmonary rehabilitation in people with COPD improves exercise capacity, quality of life and reduces admissions and has been calculated to be far more cost -effective that triple pharmacotherapy.
- New prescribing advice from the MHRA means that the number of people in whom nitrofurantoin is no longer in theory contraindicated has increased.
- In the last year there has been a large decrease in the prescribing of Ciprofloxacin, now mirrored by a significant reduction in the *C Diff* tox positive tests at the HSSD Pathology lab.

1. Exercise Therapy

Health services in all developed countries are under ever-increasing pressure and the Bailiwick of Guernsey is no exception. A significant amount of the healthcare budget is spent on pharmacotherapy. Medication is easy to prescribe, dispense and supply. New drugs must undergo a rigorous local approval process before they can be prescribed at public expense. After approval, it can be difficult to scrutinise how a drug is prescribed in relation to other treatment options.

Physical therapies for long-term conditions can be very cost-effective and deliver many extra benefits in terms of improved wellbeing and quality of life. However because the resources of the pharmaceutical industry to conduct the research and publicise the results are infinitely greater, it is often unknown how they might compare with drug treatment.

Pulmonary rehabilitation is well established in the care of people with chronic obstructive disease or COPD. A large component of this involves individualised supervised exercise and good quality evidence has shown that it leads to increased exercise capacity, improved quality of life and reduced admission. Guernsey patients have access to a well-established highly regarded pulmonary rehabilitation service, but this is not the case in other areas.

This is in stark contrast with the number of patients with relatively mild disease who are prescribed "triple therapy" of long-acting muscarinic antagonist, inhaled corticosteroid and long-acting beta$_2$ agonist. In 2012, the London Respiratory Group highlighted the relative value of various interventions for COPD in terms of quality adjusted life years or QUALYs. The cost per QUALY of pulmonary rehabilitation was calculated to be £2,000 to £8,000. Triple therapy was calculated to cost £35,000 to £187,000 per QUALY.

Increasing exercise is recommended first line in many conditions including osteoporosis prophylaxis, mild to moderate depression and hyperlipidaemia. There is now a growing body of evidence that it may improve survival in cancer patients. It is not known what the cost per QUALY is in these areas, but given the massive difference between triple therapy and pulmonary rehabilitation, increasing physical activity may be far more effective than we realise. "Exercise on prescription" is an option for doctors in the Bailiwick to recommend to their patients.

2. Nitrofurantoin for Urinary Tract Infections

The Medicines and Healthcare products Regulatory Agency (MHRA) has revised its guidance on contraindications to nitrofurantoin, in light of increasing bacterial resistance to standard antibiotics used to treat lower urinary tract infections (UTIs).

Last year the MHRA reminded healthcare professionals that nitrofurantoin was contraindicated in patients with renal impairment, defined as creatinine clearance of <60mL/min. In its revised guidance, the MHRA has concluded that the available evidence supports a change in the estimated glomerular filtration rate (eGFR) at which the drug is contraindicated. As a result, nitrofurantoin is now contraindicated in patients with an eGFR of <45mL/min/1.73m.^{2} Healthcare professionals can also prescribe a short course (3–7 days) in patients with an eGFR of 30–44mL/min/1.73m^2, but this should be used with caution, defined as only if there is multidrug resistance, and when the benefits of nitrofurantoin outweigh the risks of adverse effects.

The change came after the MHRA reviewed the evidence for the previous contraindication. One of the two papers cited by the MHRA as evidence supporting the change was a retrospective cohort study that analysed the records of 21,317 women treated with nitrofurantoin for a UTI. Renal function status was available for 3,888 women. Treatment with nitrofurantoin was not associated with a higher risk of ineffectiveness in women with moderate renal impairment (30–50mL/min/1.73m^2). The authors did find a significant association between renal impairment (<50mL/min/1.73m^2) and pulmonary adverse events leading to hospitalisation. The authors of a second paper noted that the contraindication for nitrofurantoin changed from a creatinine clearance of 40mL/min to 60mL/min in 1998. However, they noted that this change was based on low-quality evidence that assessed urinary recovery of nitrofurantoin in patients with various degrees of renal function.

3. Ciprofloxacin prescribing and *C diff* reports

In 2013 a number of pieces of work on antibiotic stewardship were undertaken. Subsequently prescribing of Ciprofloxacin fell by 40%. Recent data from the laboratory has shown a similar reduction in positive *C Diff* toxin reports, as follows.

Year	**Positive *C Diff* toxin**
2012	20
2013	20
2014 (January 1st to December 10th)	13

The trend is clearly downward, which is excellent news. However the laboratory at the PEH changed testing methods in July 2013 and it is possible that beforehand true positive cases were reported as being falsely negative. It is likely that these self-resolved as there was not a remarkable *C Diff* burden at this time.

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References : 1. DTB Select December 2014, 2. Drug Tariff December 2014 3. EPACT.net