Week 8: The Rise and Fall of HRT

For this seminar, students will need to bring:

- **these seminar notes**
- **the paper by Hulley *et al***
- **the CONSORT checklist**
- **the CASP checklist for appraising clinical trials**

Links for the last three are given in the Topic 8 outline for this module on QMplus

Part 1: Exercises

1. Each of the following examples of a hazard ratio (HR) with confidence interval and P-value from a trial contains a misprint. Explain why we can be sure of this in each case.

   (i) HR 1.52 (95% CI 1.61 to 2.29), P=0.045

   (ii) HR 0.61 (95% CI -0.43 to 0.87), P=0.006

   (iii) HR 1.14 (95% CI 0.58 to 2.24), P=1.703

   (iv) HR 0.57 (95% CI 0.48 to 0.68), P=0.150

2. Suppose you are recruiting for a trial in which subjects are allocated to groups "A" or "B" using block randomisation, not stratified, with a *fixed but unknown* block size. Randomisations are provided to you by an online randomisation service. The first 23 subjects are allocated as follows:

   ABBBAABBAABAAAABBBAABBB

   Can you figure out which group the 24th subject will be allocated to?

In questions 3 and 4, decide for each part of the question whether the statement is true or false, and give your reasoning.

3. In a randomised controlled trial to compare a new analgesic with placebo for the control of pain in arthritis, subjects reported less pain while using the analgesic and the difference in pain scores between the two regimes was highly statistically significant (P=0.002).

   We can conclude that:

   a) an important clinical advance has been made.

   b) there is good evidence that the drug reduces pain.

   c) the drug is a very effective analgesic.

   d) the difference between mean pain scores on the two regimes was 0.002.

4. In another randomised controlled trial to compare a new analgesic with ibuprofen (the standard treatment) for the control of pain in arthritis, the difference in pain scores between the two regimes was not statistically significant (P>0.05).

   We can conclude that:

   a) the new drug is useless.

   b) the trial has failed to demonstrate a difference in analgesia.

   c) the difference between the drugs is very small.

   d) there are no important differences in the analgesic properties of the drugs.

Part 2: Critical Appraisal of the paper by Hulley et al

5. (i) Work through the CONSORT checklist, making a note of whether each recommendation on the checklist is dealt with satisfactorily in the JAMA paper by Hulley *et al*, and – if it is – making a note of the page number or position in the paper where it is dealt with.

   (ii) The CONSORT checklist is intended for judging how well a trial is *reported*, rather than how well it was conducted. (A good quality trial might be poorly reported, and a poor quality trial might be well reported, though the latter is usually more difficult to achieve!) For critical appraisal of published work you may also find a critical appraisal tool, such as those produced by CASP, useful. Within your group, try and answer the 11 questions on the CASP form, in relation to the Hulley *et al* paper. For each question, think about why the question is useful in a critical appraisal, and how your answer helps you to evaluate the Hulley *et al* trial.

   (iii) Did you find that either or both of the CONSORT and CASP tools helped you with critically appraising the trial? Discuss what you thought was good or bad about these tools.