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MICHAEL HEAP

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'MORE OR LESS' AND MEDICAL MISINFORMATION

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With so much misreporting, misinformation and deliberate deception swilling around in the media, notably concerning the coronavirus pandemic, it's gratifying that there are easily accessible sources dedicated to exposing those erroneous claims that receive such attention, and presenting the public with the best available evidence. Amongst these is BBC Radio 4's 'More or Less', created in 2001 and now having three series every year of six episodes each. The programme specialises in correcting the misreporting, misunderstanding and misuse of statistical information by the media, politicians, conspiracy theorists, and so on. A useful example is their fact-checking of government misinformation on the daily statistics for testing COVID-19 infections.

The episode broadcast during the last week in August *(note 1)* featured, amongst other things, two important medical issues of topical interest. The first of these was the use of convalescent plasma therapy (CPT), i.e. treating COVID-19 patients with the plasma of recovered patients. The presenter, Tim Harford, reported that President Donald Trump had complained on Twitter that the US Food & Drug Administration (FDA) was deliberately hampering the efforts of drug companies to test vaccines and treatments until after the Presidential election on November 3rd ('they are part of the deep state'). He tagged the name of the Commissioner of the FDA in his tweet. Lo and behold, the next day the Commissioner, Dr Stephen Hahn, appeared with Mr Trump at a press conference in the White House at which the President proclaimed that he was making a 'truly historic announcement' in the battle against 'the China virus', namely that the FDA had announced the emergency use of CPT for COVID-19 patients, a treatment that had been shown to be very effective and would 'save countless lives'. Mr Trump informed the world that CPT had been proven 'to reduce mortality by 35%'.

The truth is that there is yet insufficient evidence that CPT is an effective treatment for COVID-19 because randomised controlled trials have not been completed. The observational data from the Mayo Clinic, presented in a preview paper, indicate that if there *is* a reduction in mortality it is not the case that, as Dr Hahn so ineptly stated, 35 patients out of 100 with COVID-19 could be saved from dying. The death rate for patients treated with high-antibody CPT was 8.9% and that for low-antibody CPT was 13.7% within a period of 7 days, a difference of less than 5%.

Following a furious backlash from the medical profession, Dr Hahn has humbly apologised for his mistake *(note 2)*. Has Donald Trump? *(Don't ask stupid questions—Ed.)*

The second topic of interest featured in the 'More or Less' episode was one raised by Professor Susan Bewley in the last 'Medicine on the Fringe', namely the advisability of routine screening for breast cancer. In England, women aged between 50 and 70 are automatically invited for screening every 3 years but there are doubts about whether the benefits outweigh the disadvantages, notably those due to the relatively high number of false positives and the risk of overdiagnosis (i.e. true positives which would have caused no problems if left undetected and therefore untreated). The programme reported that on August 12th the results of a controlled trial of mammographic screening on younger women had been announced in the *Lancet (note 3)*. The trial involved 23 breast-screening units across Great Britain. Women aged 39–41 years were randomly assigned to yearly mammographic screening up to the age of 48 or to standard care with no screening until aged 50. A total of 160,000 women were involved in the trial between 1990, and 1997, with an average follow-up period of 23 years.

The results of the trial were somewhat equivocal. There was some evidence that fewer women in the screening group died of breast cancer, but there was no group difference in rate of mortality overall. So it is not possible to say 'screening saved lives'. Perhaps this failure to detect a difference in all-cause mortality relates to the relatively low incidence of death due to breast cancer (7%). This also accounts for why the finding of a 25% reduction in the risk of dying from breast cancer sounds less impressive when translated as a reduction of 1 death in a thousand women screened (the reduction for women over 50 is 5 according to 'More or Less'). This may or may not justify the lowering of the age for routine screening; it depends on whether or not you believe that the money and

resources devoted to this could save more lives if directed elsewhere. A factor to consider here is the false positive rate which was 180 for every 1000 women screened.

Finally, Tim Harford himself has had to confess to a bit of misinformation (unintended) on COVID-19. At the beginning of September it was announced in the *Mirror*:

> *An economist claims the threat of coronavirus in England is about as risky as taking a bath - with figures showing the chance of dying from the disease each day is around one in two million.*

Other tabloids reported likewise. But he'd slipped up and it's not true. The figure he gave was the *annual* risk of dying in the bath.

Notes

1. https://tinyurl.com/y3lypfa5
2. https://tinyurl.com/y2m9zodo
3. Duffy, S.W. et al (2020) Effect of mammographic screening from age 40 years on breast cancer mortality (UK Age trial): final results of a randomised, controlled trial. *Lancet*, **21**, Issue 9, 1165-1172. At: https://tinyurl.com/y5cexlm6