IVERMECTIN AND COVID-19

In her broadcast, Sarah advocated the use of Ivermectin to combat COVID-19, claiming it was a "brilliant drug". This prompted some heated discussion, as do so many topics connected with the disease.

To establish some balance in the debate, I have tried to draw together some strands, so that you can come to an informed opinion on the topic. Here's what I have:

1. **The media**: the media, including medical media, cannot be trusted to report on the merits of Ivermectin in an objective way. Therefore, do not trust what you read in the press (and be even more cautious if what you read supports what you already believe - it's human nature not to question something which we already believe to be true!)

2. **The BIRD Group**: Sarah mentioned this group during the broadcast. The name stands for the British Ivermectin Recommendation Development Group (bird-group.org) It's an international group of doctors, researchers and patient representatives who are campaigning hard to get Ivermectin approved as a treatment for COVID in the UK. There seem to be no competing interests, and they cite numerous articles and papers to support their case.

3. **Dr Sebastian Rushworth**: (https://sebastianrushworth.com/2021/05/09/update-on-ivermectin-for-covid-19/)Dr Rushworth has done a lot of personal research into the quality of evidence on many topics, including Ivermectin. He's a practising Swedish doctor, and I commend his blog to anyone with an interest in transparency in medicine. I trust him to be reliable and objective. He discussed these papers, which were relatively new in May this year:

(1) The Colombian trial (Lopez-Medina et al.). Double-blind RCT, 398 patients, very high dosage. Aim: to see if ivermectin resolved symptoms more rapidly than placebo.

(a) Result: no meaningful conclusion (but the media portrayed it as "ivermectin does not work). The very small benefit in the ivermectin group was not statistically significant.

(b) Concerns: authors were paid by drug companies with competing interests. Study was conducted on young, otherwise healthy subjects. Rushworth raises the possibility that the study was designed to fail.

(2) (Niaee et al.). Double-blind, placebo controlled RCT, conducted in Iran. 150 subjects (placebo group was very small).

(a) Result: the study appears to show that ivermectin is effective when given to patients hospitalised with Covid-19. The participants

were on average over 56, and there was an 85% relative reduction in death between the groups.

(b) Concerns: The placebo group was small, there was no information on how advanced the disease was in each case when the intervention was made, but unless the data was falsified the results are still convincing.

(3) The Argentinian trial (Chahla et al.). Unblinded, no placebo. Aim: to see if symptoms resolved more quickly with ivermectin.

(a) Result: No meaningful conclusions can be drawn at all

(b) Concerns: conducted on people with mild disease (which significantly reduces the power), not blinded, no placebo, only 172 participants, all mostly healthy, average age 40.

Dr Rushworth also conducted his own meta analysis of all the double-blind, placebo-controlled trials he could find (7 in all). Here are his results (verbatim):

> *What we see is a 62% reduction in the relative risk of dying among covid patients treated with ivermectin. That would mean that ivermectin prevents roughly three out of five covid deaths. The reduction is statistically significant (p-value 0,004). In other words, the weight of evidence supporting ivermectin continues to pile up. It is now far stronger than the evidence that led to widespred use of remdesivir earlier in the pandemic, and the effect is much larger and more important (remdesivir was only ever shown to marginally decrease length of hospital stay, it was never shown to have any effect on risk of dying).*

4. **The Egyptian Study**. (https://www.theguardian.com/science/2021/jul/16/huge-study-supporting-ivermectin-as-covid-treatment-withdrawn-over-ethical-concerns) Conducted by Dr Ahmed Elgazzar, this study reported a 90% improvement and reduction in mortality in ivermectin treated groups. The study was withdrawn from the Research Square website in July (at this point it was at the pre-print stage, and I do not think Dr Rushworth had seen it). Research Square did not give reasons, but it seems likely that the study was fraudulent, with many glaring inconsistencies and at least 79 sets of data which had been cloned from other records. Reported in The Guardian, 15th July.

5. **Meta-Analysis June 2021**. (https://academic.oup.com/cid/advance-article/doi/10.1093/cid/ciab591/6310839) Published in Clinical Infectious Diseases, 28 June 2021. Ten RCTs were included. Primary outcomes were all-cause mortality rate, length of hospital stay (LOS), and Adverse Events. No benefit was found for Ivermectin.

6. **Meta-Analysis August 2021**. (https://ivmmeta.com/#fig_fpe)This is cited by the BIRD group and includes 63 studies (of which 42 were peer-reviewed, and 31 were RCTs). It shows significant benefit for ivermectin, and contrasts this with the very limited evidence for other interventions (***NOT vaccines, which are a completely separate issue***). Here is an extract from the web page:

- Meta analysis using the most serious outcome reported shows 73% [56-84%] and 86% [75-92%] improvement for early treatment and prophylaxis, with similar results after exclusion based sensitivity analysis and restriction to peer-reviewed studies or Randomized Controlled Trials.

- Statistically significant improvements are seen for mortality, hospitalization, recovery, cases, and viral clearance. 27 studies show statistically significant improvements in isolation. The probability that an ineffective treatment generated results as positive as the 63 studies is estimated to be 1 in 1 trillion.

- While many treatments have some level of efficacy, they do not replace vaccines and other measures to avoid infection. Only 29% of ivermectin studies show zero events in the treatment arm.

- Elimination of COVID-19 is a race against viral evolution. No treatment, vaccine, or intervention is 100% available and effective for all current and future variants. All practical, effective, and safe means should be used. Those denying the efficacy of treatments share responsibility for the increased risk of COVID-19 becoming endemic; and the increased mortality, morbidity, and collateral damage.

- The evidence base is much larger and has much lower conflict of interest than typically used to approve drugs.

I'm not making any judgement on this - that's for you and others more expert than me. I just wanted to share the information that I have been able to discover.

If you have something which adds to this, please let me know - I'll happily promulgate it, regardless of whether it is pro- or anti- ivermectin.

However, as you would expect, I will not share any uninformed rants from the many mischievous bloggers who seem intent on muddying the waters for reasons only they can know!

Steven Bruce
17th August 2021