How Do We Determine Whether a Therapy is Effective?

When it comes to treating a medical ailment — let's say COVID-19 — there are two major concerns regarding such treatments: **Safety** and **Effectiveness**. In this short discussion we'll address the *effectiveness* part, of possible pharmaceuticals.

From a simplified perspective, the two main ways of determining *effectiveness* of a drug to treat COVID-19, are **Macro** and **Micro**. Let's use ivermectin as an example.

Briefly, the **Macro** approach would start with in-vitro experiments. In other words, a drug (e.g., ivermectin) would first have to show some promise in a laboratory setting — i.e., that it would have killed or disabled the COVID-19 virus.

Assuming that it met safety standards (ivermectin did — e.g., here) it would then be given to give patients who have been infected with COVID-19 to see what happens. To get a more accurate idea of effectiveness, studies would compare the results of people who got ivermectin, with those who got a placebo.

Double blind clinical trials would be where neither the patient nor the scientists running the study would know who got what, until the end. Peer-Reviewed studies would be those that independent, non-participating scientists double-checked the methodology and results, and agree with the conclusions.

For ivermectin there have been sixty-five (65) studies, thirty one (31) double-blind, and forty-four (44) peer-reviewed. The results have been very positive — or in the language of scientists: "robust."

Yet, despite these macro successes, the Medical Establishment (WHO, FDA, CDC, AMA) have *not* given their endorsement of ivermectin. For a more detailed discussion of this unscientific response see this and this.

This leads us to the completely different **Micro** analysis. Basically this approach is to look at what is happening on a *molecular level* — and then make a determination as to what drugs are the most effective. In other words, this is usually a *bio-chemical assessment* in a lab. Although this can be a complex matter, we'll try to keep it simple.

An interesting part about this, is the question: *what makes a drug an effective anti-viral?* A virus is like a parasite: for it to do damage, it needs to latch onto healthy cells. So, one of the simplest ways to define an effective anti-virus drug, is to identify those pharmaceuticals that keep an attacking virus (e.g., from COVID-19) from being able to attach to our healthy cells.

There are easily over a thousand drugs (which are just different chemical compounds) that have potential (on paper) to be an anti-viral. So, has anyone sorted through most of these, and done a determination as to which (if any) are going to be effective with COVID-19? *Yes!*

This study started with some four thousand pharmaceuticals, and scientifically weeded them down to the best 47 candidates (based on in-vitro results). The conclusion (e.g., Figure 4 and Table 2) is that ivermectin was **the most effective drug for COVID-19!** Some other studies that confirm the molecular level benefits of ivermectin are here and here.

This relatively short video from Dr. Campbell goes over much of this. *Pay particular attention to the closing message.*

The bottom line is that from both the **Macro** and **Micro** perspectives, ivermectin (when properly administered) is a powerful broad-spectrum drug, that has anti-viral properties that effectively **disable the COVID-19 virus**.

As such, there is no legitimate scientific reason that the Medical Establishment has not given ivermectin its full approval and support.

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