One area where the treatment performs worse than the placebo is in injection site reactions, but this is expected, as the placebo is less likely to cause side effects than the cocktail simply because it contains no materials that are likely to cause side effects. So this concern does not dissuade us from recommending the cocktail. However, if a person is known to have an allergic reaction to one of the ingredients in the cocktail, then of course they should shy away from it.

The participants are fairly diverse for a study conducted in the US, with 9% being Black and 41% Latino. Thus, at least for those groups, we would still feel comfortable recommending the cocktail. owever, it would be nice to know the distribution of high risk factors, obesity, and age across the placebo and treatment groups to make sure none of these is a confounding variable, but if the randomization was truly random, then this is also not much of a concern.

For the safety information, this all seems well documented, with warnings about the possible reactions to taking he cocktail, such as anaphylaxis, and the disclaimers that there have been insufficient tests of the cocktail in pregnant or breastfeeding subjects are good additions to ensure no patients take untested risks. The definition of high risk patients also seem standard, with older subjects being treated as high risk and pre existing conditions such as diabetes also applying.

With everything in this information being well documented, and being tested across a wide age and racial range, and also the caveat of a lack of testing on pregnant and breastfeeding patients, this press release has addressed all of our concerns, except perhaps the breakdown of the groups after being split into placebo and treatment, to ensure that the randomness there was correctly administered. Overall, we would feel comfortable recommending the cocktail to those in areas with widespread COVID outbreaks.

Author Contributions:

Armaan Kalyanpur: Configured the Binder setup for the repository and the Makefile, wrote analysis parts III and IV, helped pythonify the translation of the R code. Olivia McNary: Wrote code in cibin.utils by translating Li and Ding R code. Wrote unit tests for all helper and util functions. Implemented the reproduction of Li and Ding method 3 in a notebook. Andrew Kaplan: Did set up around the code for the package. Mendgi Gao: Completed Analysis I & II.