

Century science for surviving viral pandemics

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Introduction: Pandemic viral infections like Influenza, Coronaviruses and HIV can be treated effectively with multiple antivirals but there are 3 problems with this line of treatment. The cost and availability is prohibitive for patients from economically challenged regions of the world. The antivirals can give rise to several adverse effects and the current guidelines for treatment which requires the CD4 counts to come down to either 350 or less in case of HIV treatment, can make early intervention difficult. There is no preparedness for new pandemic strains/variants of COVID-19, Influenza and emerging viral infections as was experienced with recent Ebola outbreaks in western Africa or the expanding spread of Zika virus. Our group of collaborators has been interested in addressing these issues of public health and has been evaluating the possibilities of developing readily available natural broad spectrum antivirals to combat pandemic virus infections as well as emerging new strains and variants.

Objectives: To determine and evaluate possible compounds that are naturally present and to test their viricidal effects on a wide range of enveloped viruses. Most of the research has centered around pomegranate juice and fulvic acid but other natural products have also been tested,

Method: The first step in evaluating a natural substance is to test for cell toxicity at concentration which will be used for testing antiviral activity. The second step is to treat about a million virus particles of vaccinia virus with about 50 microliters of sterile antiviral preparation and determine whether the level of infectious virus particles is very significantly reduced.

Results: Our results have shown that 100% sterile pomegranate juice is able to neutralize a million vaccinia virus particles within 5 minutes. Fulvic acid was able to do the same in 1 minute at concentrations at which neither of them are toxic to the cells. Neutralization of a multiple Influenza strains was also found to occur with the treatment with either POM or Fulvic acid. The same was repeated with SARS and Herpes viruses.

Conclusion: Our research with natural broad-spectrum antivirals demonstrate the potential of these safe compounds in inactivating pandemic viruses and enveloped emerging viruses. Pomegranates are available almost everywhere on our planet and could form the first line of attack along with common sense safety measures against emerging viruses against which no vaccines exist or no treatments are available. In case, of SARS-Coronavirus-2 after initially treating with antivirals, treatment with immunosuppressive agents and anti-clotting agents like Lovenox is recommended under medical supervision.

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