Coronavirus - Protection & Evaluation

In Coronavirus complications, a prominent feature is overwhelming oxidative stress (which causes Glutathione depletion), for which high-dose intravenous Vitamin C (to 10,000 mg or more daily) seems to be a remarkably effective antioxidant (in studies from China & New York City). Anything that increases oxidative stress in cells can increase complications in any illness.

My preferred approach to preventive supplements for Coronavirus protection is:

1. **Anti-oxidants:**
    a. Vitamin C, 2000-5000mg daily orally, spread throughout the day because its half-life is only a few hours;
    b. Astaxanthin, 1 gelcap daily (a potent oil-soluble antioxidant).
2. **Oil of oregano**, 1 gelcap daily (helps the immune system stop onset of a viral infection, & helps to balance the immune system).
3. **Supportive nutrients** to maintain a healthy immune system (buy good quality):
    a. Vitamin D3 (keep blood levels of 25-OH D3 up to at least 50s or 60s);
    b. Magnesium;
    c. Zinc;
    d. Selenium;
    e. Others helpful: Quercetin (bioflavonoid, also in green tea & blueberries), Resveratrol (also in dark grapes), Garlic, and Probiotics or fermented foods (unless sensitive to them, as in Mast Cell Activation Syndrome).

This virus produces massive oxidative stress in the lungs and other organs of the body, including the brain, explaining why **high-dose Vitamin C** antioxidant seems to help severe cases (IV dosages in China & New York City).

Phospholipase A2 (PLA2) is an important cellular enzyme for maintaining cell membrane Phospholipid molecules. Many viruses including Coronavirus upregulate this enzyme to help them replicate (multiply) in the cell. Decreasing this enzyme activity reduces viral replication. **Citicoline** (CDP-Choline) has been shown to do this at doses of up to 500mg 4x daily; potential side-effects may include GI symptoms & diarrhea. NOTE: Choline (from lecithin) does not duplicate the benefit of citicoline and may be toxic in high dosage due to intestinal bacteria effects.

Laboratory biomarkers found useful for evaluating severity of Coronavirus infection include:

- Low Potassium (below 4.1 correlates with low Magnesium & higher complication rate; optimum Potassium is 4.4)
- Neutrophils/Lymphocytes ratio increased (in the CBC test);
- Hb high (in the CBC test);
- ALT high (liver inflammation);
- D-Dimer high (increased blood clotting);
- Arterial O_2 saturation low;
- Arterial CO_2 low;
- Oxidative stress very high;
- "Ground Glass" appearance of lungs on chest imaging (inflammatory fluid accumulation).

Dr WG Bradford, 202009

Health factors with increased risk: Diabetes, overweight, insulin resistance, hypertension, poor nutrition, smoking, lung disease. (Sugar & high-carb diets increase risk even without diabetes.)

Touching the nose with the fingers and touching hard surfaces (not soft fabrics) that others touch are associated with both contacting respiratory viruses from others and spreading one's respiratory viruses to others. (Masks help in part by preventing touching the nose.) Viruses can survive for many hours on hard surfaces, so you may never meet the person who spread the virus to you. Minimizing touching environmental surfaces, avoiding touching the nose, and using hand sanitizer to destroy viruses on the hands are helpful for protection of oneself and others.

Obviously, prevention is better than high-intensity cure (only the immune system can cure a virus infection). I think that potentially we could avoid the serious complications of this virus by applying the preventive and early intervention techniques discussed above, but there is so far not much research with this new virus to verify these techniques, although they are safe. Validated testing and an effective safe vaccine are getting the research resources.

Immune testing for Antigens (viral molecules) can show if the virus is actively invading. Immune testing for Antibodies (the body's antiviral immune molecules) can show whether there is recent immunity (IgM antibodies) and/or longer-term immunity (IgG antibodies). Usually the Antigens decrease and disappear when the Antibodies start to build up, so they are not usually present at the same time. Both of these tests can have accuracy problems (producing false positives or false negatives), so clinical judgement is necessary for interpretation.

Respirators may not be helpful if the problem is loss of oxygen-carrying capacity in the blood rather than lung failure. (Both can occur.) High-pressure ventilation can injure the lungs in this situation and increase death rates. Patients on a respirator for a prolonged time often have hypoxic brain damage after discharge, some of them to the range of mild Alzheimer's Disease.

NOTE: The anti-malarial drugs Hydroxychloroquine and Chloroquine are toxic, and have been reported to have a higher death rate in Coronavirus infections. (Avoid medical advice from politicians.)