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Research Article **Published Date:- 2020-11-06**

SARS-CoV-2 infection and phylogenetic analysis with the risk factors in human body alongside the pulmonary effects and medication

Related the extremely transmittable abilities of SARS-CoV-2,a harmonious virus to the bat CoV, gets transmitted by three principal processes-- the inhalation of droplets from the SARS-CoV-2 infected person, contacting to the person, and by the surfaces and materials defiled with the virus. Whereupon bat Coronavirus is mostly like the pandemic causing virus SARS-CoV-2, bats are often deliberated and figured out as a possible primary host although no intermediate has not been defined yet in the wherewithal of transmission. The Spike Glycoprotein plays an important role in the case of penetration with the assistance of the ACE2 receptor and the Receptor Binding Domain. In the human body, infiltrating the nucleic acid into host cells, SARS-CoV-2 attacks one cell and one by one into the whole human body; therefore, infected cases are found symptomatic and asymptomatic considering the immune power. Patients with cardiovascular disease or diabetes proceed with their treatment with ACE2 often; therefore, there might be a high chance of getting infected. Whereas the SARS-CoV-2 infects the blood and then lungs, Antigens improvement can be better in order to avoid high-complicated effects. Currently, no vaccination or no accurate cure and treatment has not been defined. An explanation with analysis on SARS-CoV-2 has been performed from the aspect of virology, immunology and molecular biology. Several relevant figures have been included hereby in order to a better understanding of the very concept.

Review Article **Published Date:- 2020-05-18**

Contemporary American stupidity

The American character is filled with contradictions and paradoxes [1], so it is understandable that, being susceptible to the imperfections, weakness and evils afflicting all peoples [2], it features its share and many types of injustices and stupidity.

Research Article **Published Date:- 2020-04-30**

Zinc oxide nanoparticles attenuate the oxidative damage and disturbance in antioxidant defense system induced by cyclophosphamide in male albino rats

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Background: Cyclophosphamide is used for the treatment of malignant and non-malignant diseases, but, it induces oxidative damage and disturbance in the antioxidant defense system. Zinc oxide nanoparticles (ZnO NPs) are used in biomedical applications and consumer products. ZnO-NPs are protected cell membranes against oxidative damage, decrease free radicals and malondialdehyde (MDA) levels, and increase the antioxidant enzyme levels.

Objectives: The present aimed to evaluate the ameliorative effect of Zn-O nano-particles on oxidative damage and disturbance in the antioxidant defense system induced by cyclophosphamide in male albino rats.

Materials and Methods: 24 adult male albino rats were randomly divided into 4 groups (6 rats of each). Group I (Control group): Received 0.2 ml saline /day i.p. injection for 14 days (day by day), group II, (nZnO group): Received nZnO (5 mg/kg/day) b.w., intraperitoneally for 14 days, Group III (CP group): Received CP (20 mg/kg/day) b.w, day by day for 14 days by intraperitoneal injection, Group IV (CP + ZnO NPs group): Received nZnO group: Received nZnO (5 mg/kg/day) b.w., intraperitoneally for 14 days, plus CP (20 mg/kg/day) b.w., day by day for 14 days by intraperitoneal injection. After 24-hr from the last treatment, all animals were anesthetized using light ether. Blood, lungs, and liver samples were taken and prepared for biochemical measurements.

Results: Individual treatment of zinc oxide nanoparticles and CP induced liver cytochrome b5, cytochrome C reductase, and glutathione S-transferase (GST) compared to the control group, while CP increased P450. The combination of nZnO and CP prevents the elevation of cytochrome b5, P450, cytochrome C reductase, and GST compared with the CP treated group. Zinc oxide nanoparticles and CP increased liver thiobarbituric acid reactive substances (TBARS). The combination of nZnO and CP prevents the changes in TBARS concentrations compared with the CP. Injection of CP to rats reduced the activities of serum glutathione reductase (GR) and catalase (CAT) as compared with the control group. However, combination treatment of rats with nZnO and CP increased the activities of these enzymes compared with those treated with CP alone. Zinc oxide nanoparticles and CP increased serum and lung TBARS, while decreased glutathione (GSH) concentration compared to the control group, with more pronounced changes by CP. The combination of nZnO and CP prevents the changes in TBARS and GSH concentrations compared with the CP.

Conclusion: It can be concluded that CP induced oxidative stress and disturbance in the antioxidant defense system. Treatment of rats with zinc oxide nano-particles and CP together attenuated the oxidative damage and disturbance in the antioxidant defense system induced by CP. So, Patients treated with CP advised to take nZnO to prevent the side effects of chemotherapy. Further studies are necessary to evaluate the amelioration effect nZnO and other nano-particles against oxidative stress induced by CP in different doses and experimental models.