

## Sudanese Probable Strain of COVID.19

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### Abstract

COVID.19 stills represent the leading health problem worldwide, not only because of its high morbidities and mortalities, but due to its rapid alterations to new stains. After many more than three years of study of it, I hypothesized many theory regarding the origin of the virus and its strains and their pathogenesis.

This paper discussed about the emergence of new strain of COVID.19 (Sudanese strain of COVID.19), When the world watched emergence of COVID.19 in Wuhan, China, Sudanese people focus on their revolution against the National congress party and his leader Omar Albashir.

Excessive usage of tear gas during revolution years since 2018, up to the date lead to mutation of COVID.19 as unfortunately opportunistic and un wise politicians used youth to attained their goals and the authorities used excessive tear gas which contains o-chlorobenzylidenemalononitrile, oleoresin capsicum and sulphur dioxide. These ingredients of Lacrimators (tear gas) denature the envelope of COVID.19 and lead to emergence of Sudanese Strain of COVID.19, which affects mainly eyes and lungs, also influence gastrointestinal tract and cause mood disturbances, walking difficulties, and other common symptoms of COVID.19 (headache, nausea, sore throat). In this paper we try to find explanation for multi-drug resistant falciparum malaria, yeast overgrowth, sulfur dioxide breathing and postural tachycardia syndrome seen in some cases of the probable newest strain of COVID.19.

Vitamin C, azithromycin, paracetamol, can be used to manage the Sudanese probable COVID.19 strain. Patients with chronic diseases should continue their prescribed medications especially hypertensive patients.

**Keywords:** COVID.19; Tear Gas; Sudan; Heavy Metals

### Observation

In March 2023, I observed several cases of eye infections with unknown etiology, and some cases of respiratory and idiopathic eye coinfection, counting myself, and others. With mood disturbance, anxiousness, difficulties in walking, postural tachycardia syndrome, purulent sputum, nausea, headache, sore throat, dry cough, sulfur dioxide-like breathing, gastrointestinal candidiasis, giardiasis, amoebiasis, also appearance of *Plasmodium falciparum* drug resistant strains in rare cases.

### Hypothesis

As I hypothesized that the main mode of COVID-19 transmission is speaking and metals behaviour of COVID-19 and its strains due to its heavy metals contents [1]. I hypothesized that cadmium and lead are responsible for mutation of influenza virus into COVID-19 [2].

As proven, that chloride oxide is effective at preventing aerosol-induced influenza virus infection in mice by denaturing viral envelope proteins at a concentration well below the permissible exposure level to humans [3]. Sulfur dioxide has potent mutagenicity and it can cause genetic damage [4].

As I hypothesized before COVID.19 is a denaturated influenza virus, I hypothesized that o- chlorobenzylidenemalononitrile and sulphur dioxide contents of tear gas are responsible for emergence Sudanese probable strain of COVID.19.

### Historical and scientific base

Revolutions are not strange to Sudan or Sudanese people. Revolutions comprise a stable part of Sudanese uniqueness: from protesting for independence from the British in 1956 to revolutions that overthrew rulers in 1964 and 1985, to failed attempts in 2013, and finally to ending the 30-year reign of Omer Al-Bashir in 2019. The most recent Sudanese revolution began on 13 December 2018 [5]. The last revolutions accompanied by excessive usage of tear gas not just against roads protests but also fired tear gas into hospital wards [6].

Tear gas has gained common acceptance as a means of controlling civilian crowds and subduing barricaded criminals. The most broadly used forms of tear gas have been o-chlorobenzylidenemalononitrile and  $\omega$ -chloroacetophenone. Published and recent unpublished *in vitro* tests have shown o-chlorobenzylidenemalononitrile to be both clastogenic and mutagenic [7].

Sulfur dioxide has distinguished effects on humans-sometimes called “tear gas,” its value in dispersing rioters is frequently witnessed on television news bulletins [8].

### Pathological features

Lacrimators, quickly incapacitate the victims by causing eye pain, lacrimation, and blepharospasm. Though tear gas sprays are considered safe by many, exposure (particularly when repeated) may result in long-term ocular complications, and asthmatics are especially vulnerable to pulmonary complications [9].

Respiratory symptoms related to 2-chlorobenzylidene malononitrile (CS) are nasal irritation, rhinorrhea, cough, and breathlessness. While the respiratory symptoms are transient in nature, laryngospasm, pulmonary edema, and reactive airways dysfunction have also been reported. Exposure in congested spaces raises the harmful effects of CS. Pulmonary function worsening and respiratory complaints might be noticed several months after the termination of exposure to CS. Other widespread tear gas, oleoresin capsicum (OC), may also cause sore throat, cough, wheezing, shortness in breath, laryngospasm, and rarely respiratory arrest [10]. It causes almost immediate irritative symptoms to the skin, eyes, and respiratory system. Dermatological effects comprise a burning sensation, erythema, and hyperalgesia. Ophthalmic effects involve blepharospasm, conjunctivitis, peri-orbital oedema, and corneal pathology [11].

Heavy metals are often the underlying cause of *Candida* overgrowth. The body uses *Candida* to tie with those toxic elements as it is safer to have them that way. You can't deal permanently with the overgrowth until you have the toxic metals in your body [12].

Among the heavy metals zinc and cadmium were the most regularly recognized heavy metals associated with resistance to antibiotics [13]. Cadmium exposure may cause a fall in serum zinc levels [14]. Men with depressive mood exhibited considerably higher blood Cd levels than those without depressive mood [15].

Study done by Rosenberg E., *et al.* [16] demonstrated that when exposed to heavy metals, the sensitive line accumulates metal, whereas no accumulation was observed in the resistant (*P. falciparum* multidrug resistance) line. The accumulation occurs within the parasite itself and not in the cytoplasm of the red blood cell. Cadmium probably has two roles in this reversion, as a selective agent and as an enhancer of the mutagenic process.

Study done by Infante J C., *et al.* [17] showed that the biomass of the yeast *Saccharomyces cerevisiae* was used to remove lead, mercury and nickel in the form of ions dissolved in water.

*Saccharomyces cerevisiae*, a common yeast in the gut, induces uric acid production by intestinal epithelium [18].

Sulfur dioxide may decrease fertility in males and females. Repeated exposure can cause loss of sense of smell, headache, nausea, vomiting and dizziness [19]. Increased endogenous SO<sub>2</sub> levels might be involved in the pathogenesis of postural tachycardia syndrome.

### Management scenario

Vitamin C (once a day/week) + Azithromycin 500 mg tabs(one/day for 3 days) + Paracetamol 500 mg (2 tabs/headache attack). Rest for at least 5 days and using protective masks for 2 weeks. Doxycycline 400 mg (one/12 hours) In case of drug resistance malaria. No need for treatment of commensal candida as it achieves protective function. Hypertensive patients should continue their prescribed medications.

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