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Antimicrobial Action of Electric Current in a Case of Associated Chronic Urinary Tract Infection to Covid 19 and the Aggravation of other Pathologies

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ABSTRACT: Low-intensity electrical current has been used in biology and health for years. In this case report, it was used to treat urinary tract infection associated with Covid 19, increased blood pressure, blood glucose rate and other signs and symptoms, using electrostimulation equipment with medium voltage characteristics and a frequency of 6 hz ; the application time for each session was 30 minutes and pieces of aluminum foil were used as electrodes in the abdominal and thoracic regions. There was a rapid decrease in pain, a decrease in the number of leukocytes in the EAS at the same time that there was a remission of characteristic symptoms of COVID 19 and disappearance of pulmonary nodules.

KEYWORDS: Analgesia; bacteria; electricity; treatment; virus

I. INTRODUCTION

Electricity has been used for years to restore health, prevent complications and analgesia. Different parameters, such as frequency, started to be isolated and used to enhance therapeutic efficacy. In the present case report, the bacterium isolated from the urine culture was *Escherichia coli*. A team demonstrated that the ultra low voltage applied for 30 minutes created holes in the cell membrane that allowed small molecules, ions and proteins to leak into and out of the cell, killing the bacteria [1]. One possibility that may have occurred in the present report is the formation of small tensions inside the organism. The output voltage of the equipment can be much higher - enough to cause these variations in tiny scales in the innermost tissue, thus promoting the antimicrobial effect.

Conventional antibiotic treatments may not be fully effective in case of chronic bacterial infections due to the formation of biofilms,

“The result was the destruction of all bacteria *Pseudomonas aeruginosa*, frequent in pneumonia and burns of patients in the ICU”.

Bacteria that clump together in layers, called biofilm, are more difficult to kill because antibiotics partially penetrate feathers in this protective layer. Parts of these persistent colonies survive treatment by developing genes that make them resistant to the antibiotic. With this, they can grow and multiply, resulting in chronic infections [2].

Another study highlighted that microampere electrical currents ($\leq 100 \mu A$) on short timescales (for example, 30 minutes) caused significant damage to the membrane to allow bidirectional leaks of ions, small molecules and proteins across the bacterial membrane [3].

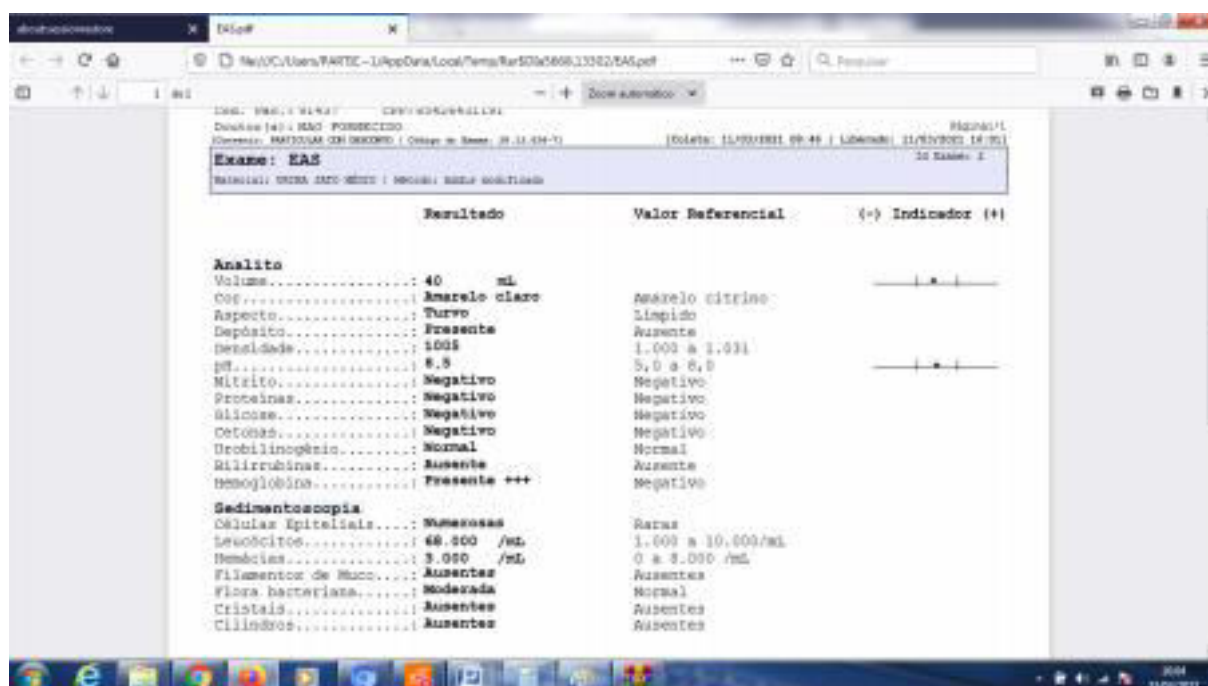
Few references were found in relation to electrical treatment for virus inactivation and viral activity. On a website, references were found regarding this non-invasive treatment modality.

In a remarkable discovery at Albert Einstein College of Medicine, NYC in 1990, it was shown that a minute current (50 to 100 MICRO amperes) can alter outer protein layers of HIV virus in a petri dish so as to prevent its subsequent attachment to recipient sites. It may also reverse Epstein Barr (chronic fatigue syndrome), hepatitis, and herpes B. HIV positive users of this enclosed information may expect a NEGATIVE p24 surface antigen or PCR test (no more HIV detectable in blood) after 30 days. This is reminiscent of a well-proven cure for snakebite by application of electric current that instantly neutralizes the venom's toxicity. And there may be several other as yet undiscovered or untested viruses neutralizable with this discovery [4].

It is suggestive that the rapid production of antibodies occurs after the action of the electric current, and also that the bacteria and the virus partially or fully activated function as antigens, further favoring the production of antibodies. It was further suggested that infected human HIV carriers could be cured by removing their blood, treating it electrically and returning it by methods similar to dialysis [5]. Another effect that can occur is the antitumor action on nodules of unspecified cell etiology in the lungs. This effect was an accidental finding.

II. CASE REPORT

Female, with morbid obesity, with type 2 diabetes mellitus, systemic arterial hypertension and COPD - Chronic Obstructive Pulmonary Disease, presented acute infectious condition in the urinary tract together with symptoms commonly related to Covid 19 and others - dry cough, low fever and mild dyspnea, which probably appeared 14 days after exposure to SARS-CoV-2, an episode of diarrhea with probable melena lasting 2 days and spontaneous resolution and asthenia. Partial anosmia and cardiac and neurological signs and symptoms also appeared, it is not known whether there were underlying etiologies related to them before or together with the Covid 19 suggestive acute episode. There was a medical suspicion of concomitant severe sleep apnea. Serological examination for Covid 19 showed presence of IGG and absence of IGM. PCR negative around 27 days after symptom onset.



Analito	Resultado	Valor Referencial	(-) Indicação (+)
Volume	40 ml		
COR	Amarelo claro	Amarelo citrino	
Aspecto	Turvo	Limpido	
Depositos	Presentes	Ausentes	
Densidade	1.005	1.000 a 1.030	
pH	8.5	5.0 a 8.0	
Músculo	Negativo	Negativo	
Proteínas	Negativo	Negativo	
Glicose	Negativo	Negativo	
Cetonas	Negativo	Negativo	
Urobilinogênio	Normal	Normal	
Bilirrubinas	Ausente	Ausente	
Hemoglobina	Presente +++	Negativo	
Sedimentoscopia			
Células Epiteliais	Numerosas	Raras	
Leucócitos	48.000 /mL	1.000 a 10.000/mL	
Hemácias	3.000 /mL	0 a 3.000 /mL	
Filamentos de Muco	Ausentes	Ausentes	
Flora bacteriana	Moderada	Normal	
Cristais	Ausentes	Ausentes	
Cilindros	Ausentes	Ausentes	

Figure 01. Routine urinalysis performed before treatment with low intensity electricity.

Source: own authorship

[illegible]

Approximate 28 days of onset of symptoms of COVID 19

Around 28 days after cardiac and neurological symptoms and partial anosmia appeared. On the same day, experimental treatment combined with medication was started. There was also the use of Nitrofurantoin 500 mg, 4 times a day - for concomitant treatment of urinary tract infection with high leukocytosis. For the treatment of diarrhea, 1 tablet of 2 mg of loperamide hydrochloride was used.

Regarding the medication part, Prednisone of 10 mg was used for 7 days and 1 to 2 tablets of AASS indefinitely (the patient was already using 1 tablet per day). Furosemide was used in 3 days, without alternation, in which severe malaise was associated with mild dyspnea, with SPO2 within normal levels.

An extensive piece of aluminum foil was placed as electrodes on the ventral surface of the chest and one on the dorsal surface. The electrodes were not touching. Saline was spilled over the regions where the electrodes were subsequently placed. A pulsed current with voltage measured in a multimeter analog of 50 volts on average, was applied to both electrodes, for a period of 35 minutes. 9-volt batteries were used. The treatment was carried out for 3 days.

SPO2 measurement, blood pressure, temperature and heart rate were performed simultaneously.

IV. RESULTS AND DISCUSSION

Initially, only treatment was performed, in a single session, with the equipment around 15 days after the probable date of exposure to SARS-CoV-2. No drug treatment was associated. The symptoms of partial anosmia, mild dyspnea, and a dry cough disappeared after the session, but reappeared and disappeared a few times until complete resolution. There was a progressive improvement in asthenia.

On the third day of use, no analgesia was observed, which was intensely present in the first two sessions. The following day, mild dyspnea and malaise occurred. When testing the equipment and the battery, it was observed that it did not show a decrease in voltage; the equipment outputs marked no voltage. Realized - if the potentiometers used for voltage control were at the limit, where the resistance prevented the passage of current; as a consequence, it did not mark voltage at the outputs used as electrodes.

After the correct use of the device, the 9 volt batteries marked the average of 7 volts of remaining voltage.

During the session, there was analgesia of muscles in the thoracic and abdominal region. There were no new episodes of dyspnea in the hours after the first two sessions.

Resolution of these symptoms has been reported after administration of the aforementioned drug.

It is suggestive of the efficacy of the experimental treatment in relation to signs and symptoms of Covid 19 - dry cough, fever, dyspnea, partial anosmia and neurological and cardiac symptoms.

The combination of systemic corticosteroids and antioagulants, together with the application of low-intensity electrical was effective for the treatment of patients with various associated uncontrolled comorbidities, in addition to relevant bacterial infection in the urinary tract.

For the adoption of part and all of the reported procedure, it is highly recommended to carry out prior research with a statistically relevant result of its effectiveness.

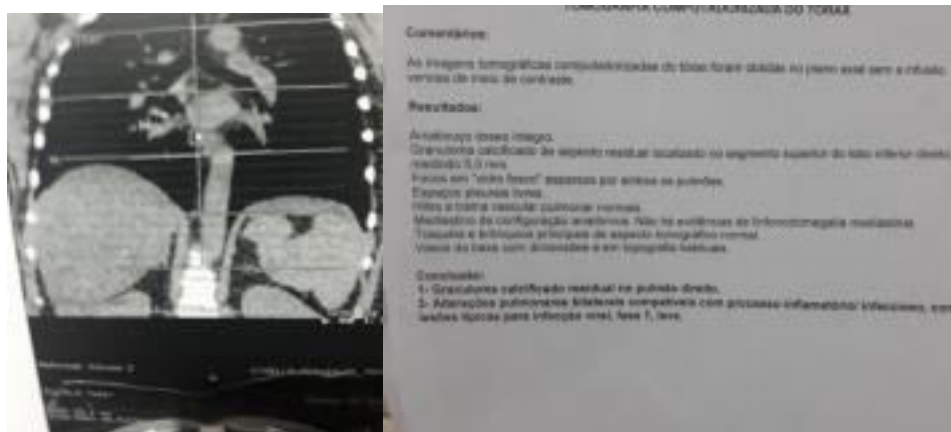
An unexpected effect was the absence of small pulmonary nodules considered calcified in several computed tomography scans - performed during and after the first episode of Covid 19, in the second half of 2021. It is possible that they were not calcified and were small benign or malignant tumors, of unknown etiology. After observing two CT scans, a pulmonary nodule, located in the lower part of the right lobe, had grown from 3.3 mm to 5 mm in an interval of 50 days.

A concentration of molecules and substances would be obtained at a specific point in the tumor with the application of electrical current. The following effects could be expected: the deactivation of the active sites of the enzyme ribonucleotide reductase, according to Kulshreshtha [5] and the small concentration of compounds resulting from electrolysis responsible for necrosis, cell apoptosis and decreased mitotic proliferation of cancer cells, according to Furtado [5].



Figures 04, 05, 06 and 07. Computed tomography report and pulmonary nodules; the largest has 3.3 mm. Date of 2020/07/03

Source: own authorship



Figures 08 and 09. Computed tomography report and 5 mm pulmonary nodule. Date of 2020/08/22 Source: own authorship



Figure 10. Chest computed tomography report. There were no pulmonary nodules. As of the writing date of this article, the author did not yet have all the images at hand.

Source: own authorship

V. CONCLUSION

Through the results of laboratory tests (EAS), the efficacy of the high voltage and low amperage electrical treatment of infections caused by the bacterium *Escherichia coli* in the human urinary tract is concluded. Stool staining was also a factor suggestive of bactericidal action in the intestinal tract.

It is suggestive of the efficacy of the experimental treatment in relation to signs and symptoms of Covid 19 dry cough, fever, dyspnea, partial anosmia and neurological and cardiac symptoms.

The combination of systemic corticosteroids and antioagulants, together with the application of low intensity electrical, was effective for the treatment of patients with various associated uncontrolled comorbidities, in addition to relevant bacterial infection in the urinary tract.

The methodology is supposedly effective in combating small malignant and / or benign lung tumors.

For the adoption of part and all of the reported procedure, it is highly recommended to carry out prior research with statistically relevant results of its effectiveness.

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