Fixing Blood Alkalinity by Using *Apium Graveolens* as Treatable Strategy to Prevent Covid 19 Likes Infection

Abdul-Samad Uleiwi Hassan[1], Manal Abd Alwahed Alssirag[2], Sameer Mageed Alatar[3]

[1]Prof. Dr. Al-Forat Al-Awsat Technical University, Health&Medical Techniques College, Medical laboratories Techniques Department/Iraq, [2]Assit. Prof. Dr. Kerbala University, College of Agriculture, Animal production Department/Iraq, [3]BSc. Pharmacy. Ministry of Health, Department of Najaf /Iraq

Abstract

Juice of fresh celery solution will be given to domestic cats and normal cases of human to achieve the purposes of this project. Dosages given three times a day/one weeks in a mount of one cup 250 ml for human 143 lb, and cats 10 lb in amount of one spoon 15 ml for each. Later, blood O_2, CO_2 and alkalinity Evaluated to get results.

Our study conclusion were proves the high ability of the celery juice's antioxidants compounds to relieve the high acidity of blood resulted from viral infections like covid 19 and influenza, in a way to curing and strengthening the immune system against those viral infecions.

Keywords: *Blood Alkalinity, Covid 19, Celery.*

Introduction

Blood pH is a chemical scale used to specifying how basic or acidic (as it called alkalinity) a blood is(1). It was adjusted to be in critical range from 7.3 to 7.4, tending to be somewhat basic. When blood pH less than 7.3 like to being more acidic, comparing to that more than 7.4 which considered basic. Each of pH, both of partial pressure of oxygen (pO_2) and carbon dioxide (pCO_2), in addition to bicarbonate (HCO_3^-) are adjusted by a homeostatic factors and mechanisms performed through both of urinary and respiratory system to control the acid-base balance and respiration(2).

Acidosis is a case leading to increase blood (plasma) and other tissues pH (i.e., an elevated hydrogen ion ratios). This condition of low blood pH termed acidemia (pH lower than 7.3)(3). On the other hand, alkalosis resulting from an action declining hydrogen ion levels of arterial plasma (alkalemia) where pH is higher than 7.4(4).

Acid–base homeostasis term referred to the homeostatic establishment for pH of the body's extracellular fluid (ECF). This crucial maintenance between the bases and acids (i.e. the pH) in the ECF is important for the normal physiology and metabolism of the body. Both pH of the extracellular fluid and the intracellular fluid need to be controlled under a normal values(4).

Four existed acid-base troubles: metabolic alkalosis, respiratory alkalosis, metabolic acidosis, and respiratory acidosis. One or a more of these cases may happens at the same time. For occasion, a metabolic acidosis is almost partially conjugated by a hyperventilation (respiratory alkalosis), or a respiratory acidosis can be partially or completely accurate by a metabolic alkalosis (5).

Shah etal.(6) explained in the same way the solutions for the starting condition for a merging of coronovirus with a human cell is acidified the endosomes on their surfaces. That is mean the virus needs a low pH places and prospers in it. So once the host begin experiencing symptoms of coughing and minor trouble with respiration his CO_2 item is rising in the body as lungs have difficulty to eliminate it. This CO_2 elevation guides to a decline of the body's pH as more acidity added by CO_2. This condition in turn carry out coronvirus even good chances for fusion and damaging the host lungs and subsequently continue to boost a value of CO_2 in the body (as the lungs be more infected) and to rising acidity

in the body (pH tends to lowering). So there is indirect proportional relation that even more CO_2 increasing the acidity level that expanding chances of virus fusion and replicates and more CO_2 ratios, etc. The scientsts observe a feedback in this case which cause to winding the growth of covid 19 faster and out of control. The patients lungs get bad and worse hastily[6].

Medicinal plants and different parts of the plants used a lot to treat many diseases and for public health purposes as a whole. The employ of natural herbs therapeutics is cost-effective. Since thousands years ago, plants have been crucial in eliminating disease and now the focal point is on their task and capability in curing and their healing characteristics for various cases. Many researches have shown the confident results of various medicinal plants and herbs on hormone disorders, infertility, anemia, liver disorders, neurologic and mental disorders, and renal diseases [7].

Many studies investigated diverse biological and life activities such as antioxidant prints of phenolic compounds and flavonoids spreads widely in most plants in such as cancer, diabetes, and coronary heart diseases. Medicinal plants and herbs have inconsiderable side effects than chemical pharmaceuticals and in the same point their antioxidant tends to eliminate the toxicity of these chemical or pharmaceutical drugs [8].

Celery (*Apium graveolens* L) is a vegetable plant from the apiaceae family, and it is of the perennial or annual plants that cultured throughout regions the tropical of Africa and subtropical Europe, in addition in several areas of Asia. It has an antioxidant activities, are admits for holding back peroxidation and free radicals[9]. These chemical properties exhibited by polyphenols in a similar way, that means one or more of the phenolic groups can react with other hydrogen donors and neutralize the free radicals. A lot of studies test the impacts of celery antioxidants and phenolic compounds that have been studied by many techniques. Celery leaves and root have the strength to remove OH and DPPH (2,2-diphenyl-1-picrylhydrazyl) radicals, and these plant's part also reduces the intensity of liposomal peroxidation that represents the plant's protection.

Target of this project was to prove practically the antioxidant activity of celery against the most relevant cases like covid 19 which rises the blood acidity.

Materials and Methods

1- About 25 cat models and 55 human cases will be cleared to be tested for our project's programme both at home indoor and at cages indoor.

2- Evaluating blood O_2, CO_2 and alkalinity well done through oximeter, capnography and portable pH meter; Masimo SET®[6].

3- Celery plant vegetables (*Apium graveolens*) prepared and evaluated at labs by hit mixing gently by grabing several bunches of this plant and cut off the top and the base of the celery stalks, then rinsing and salting them carefully in a colander step before cleaving these stalks into thirds and put them for blending in the base of high-speed blender. Next step is adding 0.25 liter of water and place on the lid, make blend until texture be smooth, using the interpose to push the celery stalks into the blades as possible it is. After this put a clean nut milk bag on top of the mouth of a pitcher and spill the blended plant parts through this nut milk bag. Employ your gloved hands to squeeze the celery juice through the nut milk bag. Now the juice can be serve immediately or keep it in a tightly sealed pitcher in the refrigerator.

4- Dosage of the prepared juices by three times a day/one weeks in a mount of one cup 250 ml for human 143 lb, and the same time strategy for cats 10 lb in amount of one spoon 15 ml for each.

5- The same evaluation principles in step 2 was restored.

6- Equipments and tools were used in our research imported previously from F. Hoffmann-La Roche, Inc., Switzerland.

7- Statistical evaluation and analysis of inputs and issues were tabulated and scheduled by the computerized statistical program (SPSS) [7].

Results

The most prominent effective and affective chemical substances recorded in the applied mixture were being caffeic acid, p-coumaric acid, and ferulic acid in addition to apigenin, luteolin, and kaempferol, see table-1 below.

Table-1: Chemical composition of celery mixture tested project.

Active substances	Percentage
p-coumaric acid	0.03
caffeic acid	0.015
apigenin	0.02

The evaluated blood's O_2, CO_2 and pH for both cats and human were being tabulated below in tables-2 and -3 subsequently. It looks like there is significant improvement in these parameters values in the blood after several dosages of the tested mixture at this project.

Oxygen recording a substantial elevation in both cat (90) and human (98), also carbon dioxide registering a significant decline (33) for cat and (26) in human.

Potential of hydrogen shows natural restability after dosing passes for one week to reach (7.3) and (7.38) in both cat and human subsequently.

Table-2: Cat's alkalinity correlated values of tested variables.

Constant	Test	Control	Standard	Treated
O2 %	70	88-92	85–95	90*
CO2 mm/Hg	50	30-40	29–42	33*
pH	7.01	7.3-7.38	7.24–7.4	7.3*

* explaining a significant difference

Table-3: Human's alkalinity correlated values of tested variables.

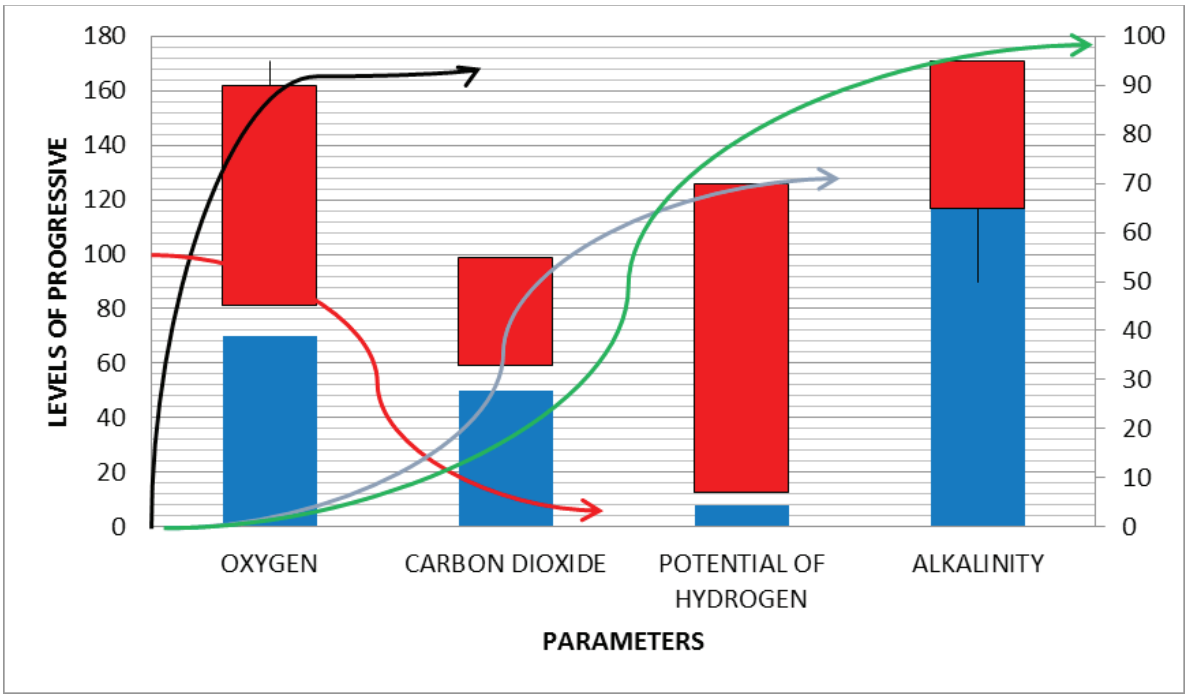
Constant	Test	Control	Standard	Treated
O2 %	77	96-99	95-100	98*
CO2 mm/Hg	40	25-28	23-29	26*
pH	7.05	7.37-7.43	7.35-7.45	7.38*

*** explaining a significant difference**

Statistical explanations exposed schematically as histogram to view data expressed in arrows showing a significant fluctuations in the ratios and values of parameters we set my sights, see scheme-1 below.

Through that diagram one can distinguishes well observed effects of vegetables mixture on the alkalinity improvement in the selected samples.

Scheme-1: a histogram expressing about statistical analysis for the effect of celery mixture on the blood gases and pH.



This level explains the values after dosage with mixture by both cat and human

This level explains the values before the mixture uses by both cat and human

Discussion

Celery lea and root juice elevated the capacity of antioxidation through reducing glutathione levels and the total antioxidative capacity (FRAP) in addition to increasing content of GSH. So this juice had defence effects through elevating the (FRAP) in some therapeutic cases. This could be supposed by the truth that some of flavonoids and other types of plant antioxidants can act as prooxidants under certain cases. Recent findings have explained that amount of cytochrome P450 can be assigned as a marker of oxidative stress take in part it had opposite affect when celery juice applied in vitro. On the other hand, in vivo tests are very complicated where data are not minutely separated since some components of celery juices act as both antioxidants and prooxidants that we looking for further explanation of effects of celery juice on antioxidant systems due to celery has an alkalizing effect lonely or working with other minerals like iron, magnesium, and sodium to have a neutralizing effect on acidic nutrition habits[12].

Modern studies established that crucial antioxidant compositors of celery juice were assessed e.g.; TAOC and ABTS. According to results obtained from HPLC it was proven that the leaves of celery have phenolic antioxidant compounds and phenolic activities of about eleven antioxidant celery cultivars. The critical phenolic acids in celery extracts incorporated *p*-coumaric acid, caffeic acid, and ferulic acid, while the recognized flavonoids consists of luteolin, apigenin, and kaempferol. Apigenin was the cheif flavonoid in this celery sample, and the preponderance plentiful phenolic acid was *p*-coumaric acid[13]. As a whole, there was a direct proportional relations between antioxidant activity, total phenolic or total phenolic acids and total flavonoid contents were proved in many studies. On another research carried out in 2012 by Nagella et al, both of antioxidant activity and chemical compounds of essential oils secluded from celery leaves were examined. At this study, the leaves were treated by distilled water and they were evaluated by gas chromatography/mass spectrometry to extracting and obtaining essential oils of leaves. About 73.72% of one leaf component were essential oils. In the next footstep, isolation of the essential oils responsible for inhibiting the DPPH radical, were investigated and the consequences proved the natural antioxidant capacity of that isolated oil from celery leaves. Another research was introduced out by Shanmugapriya and

Ushadevi[14] in 2014 on seeds of *Apium graveolens sp.* extraction shows good antioxidant activity. In the first step, seed was being extracted with water, ether and ethanol solvents and prepared subsequently. Next, the DPPH assay method used for analyzing the celery seeds activity. Results explains that methanol extract had the highest antioxidant activity among the other extracts under investigations. Research explained that methanol extract had the maximum antioxidant activity in the density of 80 µg/mL of extracts, about 63.28% ± 0.86%, while diethyl ether extract activity was 54.04% ± 0.21%, and the aqueous extract records was 52.97% ± 0.64% activity. In the same line, the celery seed shows that the entire concentration of methanol extract had the most extraordinary antioxidant activity. The researcher explained that reduction of reactive oxygen done by both of extracted flavonoids and luteolin, in the same way they elevated SOD enzymes that had protective belongings up against destructions. So they were being suggested that both of flavonoids and luteolin compounds had a major role for antioxidant activity of seeds. Other studies used photochemical screening in presence of saponins, tannins, flavonoid, and indicated the absence of terpenoids roles in the effectiveness of celery antioxidant phytochemical compounds. Total methanol content (63.46 ± 12.00 mg gallic acid equivalent [GAE]/g) was slightly higher. Fraction for ethanol was (36.60 ± 12.28 mg GAE/g) and for hexane fraction (34.86 mg ± 6.96 GAE/g). Flavonoid content in methanol extract was 56.95 ± 7.14 mg quorcetin/g and lowest of this content in methyl extract was 29.2 ± 3.15 mg quercitin/g. The activity of FRAP was analyzed as higher in comparison with other extracts[15,16,17].

Furthermore, in either method for determining antioxidant content; mint, grape leaves, and parsley demonstrated the towers 3 levels of antioxidant contents. With mention to correspondence; resembling to the data established the obvious significant correspondence between the antioxidant capacity (measured by DPPH as well as CUPRAC) of the studied vegetables with antioxidant content (measured by Folin-Ciocultaeu method) investigations is not amazing since the antioxidants assessed by Folin-Ciocaltaeu method provided well to the antioxidant capacity. Alike to the consequences turns out there was no link between the antioxidant content evaluated by total flavonoid content and antioxidant capacity unpaying that the antioxidant capacity is not alone attributable by the total flavonoids content. So this extremely marked treaty conveyed as an obvious significant correspondence between antioxidant capacity rates measured by CUPRAC and DPPH assays is not amazing[18].

As a conclusion, we had **suggested a way of medical intervention here**: first we recommend to observing patients (pH level) by applying ABG tests (or others) repeatedly and fix the pH factor as the main factor to evaluate. Second, we must fixing pH and CO_2 concentration in viral infections as possible as via using the natural antioxidant compounds exists in some fresh, cheap and easily cultured vegetables like celery. Third the applied mixture proves a good results and gives a good reliable promises in controlling acidity of blood and body fluids resulting from sudden viral infections.

Ethical Clearance: The Research Ethical Committee at scientific research by ethical approval of both MOH and MOHSER in Iraq

Conflict of Interest: None

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