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Microbial Mayhem, Oxygen Insanity, CO_2 Ignorance, and Stress Theory

Coleman L S

Science Advisor of the American Institute of Stress 220 Adams Dr. Suite 280 - #224, Weatherford, TX 76086 USA Phone: 682.239.6823

***Corresponding author:** Coleman, L. S., Science Advisor of the American Institute of Stress 220 Adams Dr. Suite 280 - #224, Weatherford, TX 76086 USA Phone: 682.239.6823

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Abstract

The tragedy of man is that he has developed an intelligence eager to uncover mysteries, but not strong enough to penetrate them. With minds but slightly evolved beyond those of our animal relations, we are tortured with precocious desires to pose questions which we are sometimes capable of asking, but rarely able to answer. Hans Zinsser (1878-1940 Physician, Bacteriologist, and Epidemiologist).

Despite modern antibiotics, bacterial infections continue to plague human existence, and "antibiotic resistance" is perceived as a common problem. Examples include MRSA (methicillin resistant staphylococcus aureus), acne, abscesses, necrotizing fasciitis ("flesh-eating bacterial infections), osteomyelitis (bone infections), pneumococcal pneumonia, impetigo (epidermal skin infection), gas gangrene, meningitis, encephalitis, sepsis, peritonitis, prostatitis, dental abscesses, Lyme disease, gonorrhea, urinary tract infections, and ear infections.

Stress theory postulates that a physiological "stress mechanism "repairs tissues, regulates organs, and causes disease in accord with environmental stresses. The recent discovery of this long-sought mechanism enables physicians to direct their treatments at the cause of disease rather than rely on fickle symptoms to judge their success [1-3]. This essay will review basic microbiology from the perspective of stress theory to explain how fresh treatment strategies can abolish "antibiotic resistance" and provide rapid, reliable cures for stubborn bacterial infestations.

The Unified Theory of Biology

The implications of stress theory exceed the bounds of medicine and imply a "unified theory of biology" that explains how life advances by evolving new stress mechanisms that adapt to specific sets of ever-changing environmental circumstances. This confers fresh explanations of the origin of life, embryology, evolution, extinction, ethology, anatomy, the Cambrian Explosion, dinosaurs, and their relationships.

Human egocentricity blinds us, and it wasn't long ago heliocentrism replaced eurocentrism. Have you ever wondered how life appeared on earth, or what produces the earth's atmospheric gases, water that fills its oceans, oil that seeps to its surface, and fresh water that suddenly appears in the middle of deserts? What prevents these substances from dissipating into outer space in accord with entropy?? Scientists searching for life elsewhere in the universe invariably assume that a warming sun, water, and atmospheric gases must be present before life can arise, even though they cannot explain the source of these substances or how life appeared on earth. The answer to these questions lies beneath our feet, where nobody looks.

Present scientific consensus, based on available evidence, is that oil, water, and atmospheric gases as well as all forms of life were absent in the early earth billions of years ago, and that the earth's earliest atmosphere consisted mostly of carbon dioxide, much like the dense CO2 atmosphere of Venus and the thin Martian atmosphere, but nobody can explain where these substances come from.

Until recently, such baffling mysteries could only be explained by a mysterious God that created the universe and everything in it, but this doesn't explain how God accomplished these miracles. Indeed, considerable evidence suggests that a Godlike intelligence is afoot, and it is difficult to imagine how life could have arisen and evolved without the help of such an intelligence.

Very recently, life has been found thriving in unexpected environments. When the Russians drilled the deepest hole on earth (the Kola superdeep bore hole), they discovered microbes, oil, water, and atmospheric gases (except oxygen) at all levels until the increasingly intense heat melted their drill bits at a depth of

12,262 meters. During the same era, American robotic probes produced evidence suggesting the presence of microbial life on Mars. More recently, a new category of microbial life called "Archaea" has been discovered in boiling hot and toxic volcanic pools where life was previously presumed to be impossible. Furthermore, microbes, viruses, and complex multicellular animal life forms that resemble familiar fish, crabs, shrimp, mussels, worms, and so forth have been discovered thriving in abundance at the junctures of tectonic plates where volcanic "rift zones" ring the earth at the bottoms of the oceans like the seams of a baseball [4,5].

These microbes and multicellular animals thrive on toxic volcanic chemicals in oxygen poor waters and cannot survive in the open ocean. Much remains unknown about these multicellular creatures. They are presumably composed of Eukaryotic cells, but if so their cells must employ some metabolic pathway other than the Krebs cycle to generate their energy. They are difficult to study, not only because they thrive at the bottom of oceans, but also because they die immediately when removed from their volcanic environment, so that such questions may linger for years to come. Regardless, these Rift zone creatures appear to be the "missing link" in the continuous evolution of life postulated by Charles Darwin.

Considering this evidence, I hypothesize that life appears spontaneously whenever environmental circumstances are favorable, and that the earth's life originated deep beneath the earth's surface, where oxygen is absent, and the nuclear core provides a Hellishly hot, stable environment that promotes chemical reactions and provides abundant energetic chemicals that serve as food. In this favorable environment life originated as self-sustaining chemical reactions that employ information systems (DNA and RNA) to extract chemical energy and vital substances from their environment. Eventually these original life forms evolved into independent, free-living cells with exterior walls that isolate their internal chemistry from their external environment. Multicellular animal life subsequently evolved in the rift zones of the oceans and then adapted to the open oceans and finally appeared on land. This would explain the "Cambrian explosion" where numerous complex multicellular animals suddenly appeared in the fossil record on the ocean floor. Meanwhile, bacterial cells developed photosynthesis and eukaryotic cells developed photosynthetic chloroplasts that enabled them to evolve into multicellular plants.

This hypothesis confers startling implications. It suggests that billions of years from now earth's life will dissipate and disappear as its nuclear core becomes exhausted, long before the sun ceases to shine, whereupon the earth will resemble present-day Mars, where all this happened before. Meanwhile Venus, where the Hellishly hot surface temperature is maintained by the refrigerant properties of its thick CO2 atmosphere, will eventually evolve to resemble present day earth when its subterranean microbial life eventually adapts to its surface. It implies that life is ubiquitous throughout the universe, but it also suggests that structurally complex multicellular life thriving on the surface of planets is a relatively transient phenomenon that is separated from similar life forms by such vast distances, chaotic planetary movement, and evanescent existence, that the chances of such life forms communicating with one another is unlikely. This hypothesis is presented in greater detail in my book [2].

Microbial Domains

At present there are three known microbe "domains": bacteria, Archaea, and Eukarya. All three proliferate in the volcanic "rift zones" and coat the ocean floor in layers so thick as to be visible to the naked eye. They serve as food for the multicellular animals in the rift zones, which also feed on one another.

Bacteria

Presently prevailing theory holds that bacteria were the original cells. They are simpler than Archaea and Eukarya. Their uniform cytoplasm contains no structures. Their DNA exists as simple strands and circles that float free in their cytoplasm. They reproduce by simple cell fission that results in two identical cells. They share DNA genetic information with one another via a process called "conjugation." They respire (generate energy) by absorbing substances outside their cell walls. Their DNA codes the production of proteins and enzymes using the "transcription/translation" mechanism. Most of what we know about RNA and DNA derives from bacterial cell research because bacteria are far easier to grow and study than the more complex Archaea and Eukarya cells.

Note that the term "respiration" has a different meaning in the context of microbial energy production as compared to the more familiar context of "breathing" in multicellular animals, where it refers to the mechanism of oxygen transport and delivery that captures oxygen from atmospheric air and delivers it to cells deep within the body [6]. Bacteria "breathe" (respire) via their cell walls.

This limits them to small size, a few shapes that optimize their external surface area relative to their interior volume, and solitary existence. That is, they cannot form complex multicellular structures, which would cause them to suffocate. The same applies to Archaea.

Bacteria have evolved into countless species with innumerable metabolic (respiratory) pathways, so that they thrive on everything from pure electricity to toxic chemicals to sewage. They can endure extreme heat and cold. They voraciously consume and spoil everything we eat and exist in vast numbers and varieties within and without our bodies, and throughout the earth's environment.

Archaea

Archaea were only recently discovered thriving in hot volcanic pools on the earth's surface, which were previously presumed to be incompatible with life. They are believed to have evolved from bacteria and be the ancestors of Eukarya. However, they lack mitochondria, and their DNA exists in the form of chromosomes that float free in their cytoplasm. Like bacteria, they respire via their cell walls, are limited to single cell existence, thrive in hot temperatures, reproduce via simple cell fission that produces two identical cells, and propel themselves using a "flagellum," which is a whiplike strand of tissue that is rotated by a reversible submicroscopic motor that resembles a familiar electric motor.

Eukarya

Eukarya are vastly larger, more complex, and more capable than Archaea and bacteria. They exist as independent, free-living cells, and they also compose all multicellular 4organisms' plants, animals, and fungi, courtesy of the fact that they contain mitochondria that generate ATP energy within their cells, which enables complex multicellular existence. They move about using hairlike cilia or by changing their shape using their intracellular muscle fibers. Their cytoplasm contains "organelles" that perform specialized functions. Their mitochondria organelles employ the "Krebs cycle," which consumes oxygen and glucose to generate ATP, carbon dioxide, and water. The ATP (adenosine triphosphate) serves as the universal source of energy for all cellular activities, including Archaea and Bacteria.

Our digestive systems convert alcohol, proteins, carbohydrates, and fats to glucose that can be readily consumed by our eukaryotic cells. Our respiratory systems capture oxygen from the atmosphere, and our circulatory systems deliver oxygen and glucose to cells deep within the body. When oxygen is inadequate our cells resort to anaerobic (without oxygen) metabolic pathways which are less efficient than the Krebs cycle and can prolong the survival of the cells for various lengths of time, but hypoxic brain damage occurs if the mechanism of oxygen transport and delivery is disrupted for more than several minutes.

The anaerobic pathways cause abnormal accumulation of lactic acid, NADH and other substances that accumulate in tissues outside the cell, but these substances are re-metabolized if oxygen is restored in a timely fashion. Numerous studies have misinterpreted the abnormal production of NADH and lactic acid as causes of cancer and other phenomena because their authors don't understand fundamental cell biology. The ignorant public can hardly be expected to understand the fallacy of such rationalizations.

Current consensus considers that mitochondria were once free-living bacteria that were somehow engulfed by Eukarya ancestors and survived in the form of a symbiotic (mutually beneficial) relationship, where the mitochondria provide the Krebs cycle that generates ATP energy, and the eukaryotic cell provides the mitochondria with glucose and oxygen. The mitochondria enable eukaryotic cells to generate ATP energy from within, which enables them to form the complex multicellular organs and structures of animals, plants, and fungi. The eukaryotic DNA which encodes the "genetic blueprint" that determines the characteristics of multicellular animals and plants is isolated within the thick walls of the nucleus, which prevents contamination by mitochondrial DNA in the cytoplasm. Eukaryotic cells divide using a complex mechanism called "mitosis" that maintains the isolation of nuclear DNA from mitochondrial DNA. Multicellular animals and plants have evolved a sex mechanism that culls harmful mutations, conserves useful ones, and enables evolution.

Eukaryotic Diseases

Free-living eukaryotic cells are abundant in nature, but fortunately they seldom cause human diseases, because they are not affected by antibiotics that kill bacteria, so available treatments are relatively ineffective. They are often regarded as "parasites" as opposed to disease-causing microbes. Here are some examples of diseases caused by single cell eukaryotes:

Plasmodium falciparum is a parasite with a complex life cycle that is transmitted by mosquitos, sequesters itself in blood cells, and causes malaria. Available treatments control it, but cannot eradicate it, and it kills more than 600,000 people each year. Entamoeba histolytica and giardia lamblia are eukaryotic parasites that cause amoebic dysentery. They usually thrive peacefully in the gut fecal material, but sometimes they cause problematic bowel ulcers.

Archaea Diseases

Thus far there is no clear evidence that Archaea cause disease in humans, even though they are commonly present as "methanogens" among the microbes inhabiting the human bowel.

Bacterial Diseases

Have you ever wondered how humans and other multicellular creatures survive and thrive without being eaten alive by the hordes of hungry bacteria that abound on our skin, lurk in our pores, besiege our noses, threaten our lungs, and flourish in our digestive tracts, not to mention the bacteria that invade our systemic blood circulation every time we suffer a scratch? Why don't contagious diseases and injuries routinely cause lethal bacterial infections? The answer is as startling as it should be obvious: oxygen toxicity.

Most bacterial life evolved in the oxygen-deficient environment deep beneath the earth's surface and can barely tolerate atmospheric oxygen levels, if at all. The vast mass of microbial life dwelling deep beneath the earth's surface continuously produces the oil, water, carbon dioxide, and other atmospheric gases that rise to the earth's surface. This paved the path for life to evolve on the earth's surface.

Ironically, photosynthetic bacteria produce most of the oxygen that constitutes 21% of the earth's atmosphere. They employ sunlight to convert carbon dioxide into carbohydrates that serve as their food and produce oxygen as a "waste product." Multicellular plants produce only a minor proportion of atmospheric oxygen. Today the earth's dense CO2 atmosphere is long gone, and CO2 exists as a residual "trace gas" that constitutes only 0.03% of the earth's atmosphere despite the contributions of automobile exhaust, industrial fossil fuel combustion, and volcanic activity that belches forth vast quantities of carbon dioxide. Small elevations in the atmospheric CO2 concentration promote plant growth better than fertilizer, and farmers burn propane in greenhouses to accelerate seedling growth. The central valley of California, where I live, is a basin surrounded by mountains that maintain atmospheric CO2 at slightly elevated levels, which largely explains why it is the most productive farmland in the world.

Animals also thrive in elevated levels of CO2. For example, bats sleep in caves and African mole rats live in underground burrows where CO2 concentrations are elevated. Both species enjoy greater longevity than comparable small mammals that endure on the earth's surface.

Humans also benefit from elevated CO2 concentrations, which stimulate all aspects of cardiorespiratory function. Breathing small amounts of CO2 promptly cures "mountain sickness by enhancing the release of oxygen from arterial blood into tissues," while guides who repeatedly climb to the top of Mt [7]. Everest, where oxygen concentrations are low and CO2 is practically non-existent, often suffer hypoxic brain damage [8].

These observations suggest that photosynthesis consumes CO2 as quickly as it emerges on the earth's surface, so that life on the earth's surface endures at the threshold of CO2 starvation.

Unlike CO2, which is benign, beneficial, and free of toxicity, oxygen is highly reactive and inherently toxic to cellular life, including multicellular animal life. Eukaryotic cells have evolved to tolerate oxygen and use it to generate ATP, but it remains toxic in high concentrations. For example, baboons develop what amounts to "adult respiratory distress syndrome" (ARDS) when they are mechanically ventilated with 100% oxygen at normal atmospheric pressures for 5 to 7 days. Astronauts tolerate breathing 100% oxygen but only at very low ambient pressures within spacecraft [9]. Physicians have known of the powerful therapeutic properties of carbon dioxide since the turn of the previous century [10-13].

Pertinent to this essay, Dr. George Washington Crile cured lethal sepsis and peritonitis using massive intramuscular morphine that rendered patients comatose for a week without food or water in an era when primitive needle technology rendered intravenous access impossible and antibiotics were unknown to understand how and why this treatment was effective, one must understand the mechanism of oxygen transport and delivery, which has been eradicated from medical textbooks, training, and knowledge for more than 60 years, along with all understanding of the therapeutic properties of carbon dioxide. In my case, I was fortunate to undergo my basic medical sciences education at New York Medical College during the two years when Dr. Johannes Rhodin, a famous surgeon researcher and pioneer of electron microscopy was retained to improve the curriculum. We received a detailed explanation of how carbon dioxide enables every aspect of the mechanism of oxygen transport and delivery, and how CO2 asphyxiation can mimic general anesthesia. Curiously, these lectures were not accompanied by any mention of the powerful therapeutic properties of carbon dioxide [10,12].

The Mechanism of Oxygen Transport and Delivery

The mechanism of oxygen transport and delivery captures oxygen from atmospheric air and transports it to cells deep within the body to sustain the Krebs cycle. For the convenience of readers, I have prepared a brief YouTube video that explains how the mechanism of oxygen transport and delivery works.6 Descriptions of this vitally important mechanism have been banished from medical publications and teaching for more than 60 years, while carbon dioxide is persistently vilified via mass media propaganda as "toxic waste, like urine" that must be "rid from the body" using mechanical hyperventilation, or as a "greenhouse gas" that threatens to broil us alive by trapping the sun's heat [10,12]. This is preposterous, because carbon dioxide enables every aspect of the mechanism of oxygen transport and delivery that is essential for life. It is a "trace gas" that constitutes only 0.03% of the earth's atmosphere at sea level, and even less at higher altitudes. There is no way that carbon dioxide could cause "global warming" or any other sort of harm at such low concentrations. If it were toxic, we would all be dead. If it were "narcotic" we would all be drunk.

In my estimation, the purpose of this ubiquitous destructive propaganda is to sustain what I call the "Leake/Waters Hoax" that was created when Drs. Ralph Waters and Chauncey Leake conspired to wreck the reputation of the nurse-anesthetists who dominated anesthesia service in the aftermath of WWI to replace the nurses with MD anesthesiologists. My previously published paper called "Four Forgotten Giants of Anesthesia History" explains the origin of the Leake/Waters hoax. It was previously available as a free download from its publisher, but the publisher, Ommega online, has mysteriously disappeared from the Internet without a trace. However, it remains available via among my published papers that are posted on my website www.stress-mechanism.com.

No civilization, let alone an advanced technological civilization that depends on truthful information, can forever withstand such bombardment via mass media of a criminally insane propaganda assault of misinformation and disinformation that is incompatible with science and sanity.

Carbon Dioxide

Carbon Dioxide Enables Every Aspect of The Mechanism of Oxygen Transport and Delivery

- CO2 stimulates breathing, which replenishes oxygen in the lungs.
- Breathing maintains pulmonary CO2 levels at 5% to optimize hemoglobin "loading" with oxygen as blood passes through the lungs.
- CO2 directly releases nitric oxide from capillaries, which opens the capillary gate, reduces microvascular flow resistance, optimizes cardiac output and cardiac efficiency, and speeds the transport of oxygenated blood from the lungs to capillary beds.
- CO2 stimulates angiogenesis (capillary proliferation) to enable athletic conditioning
- CO2 inhibits the binding of oxygen to hemoglobin, so that elevated CO2 levels release oxygen from blood into organs, muscles, and tissues.

Because descriptions of the mechanism of oxygen transport and delivery are nearly non-existent in medical textbooks I have prepared a brief video that explains how it works [6].

Every cell in the body produces carbon dioxide continuously as a product of the Krebs cycle. It readily dissolves in water, so that it harmlessly accumulates in blood and body fluids. The adult human body contains about 21 liters of gaseous carbon dioxide as compared to one liter of nitrogen and one liter of oxygen. Much greater quantities of carbon dioxide are combined with collagen and calcium to form bone.

Most oxygen within the body is bound to hemoglobin in arterial blood, which must be continuously replenished by the mechanism of oxygen transport and delivery, because oxygen is rapidly consumed by cells as soon as it is released from blood into tis-

sues. This small "oxygen reserve" in blood cannot be increased by hyperventilation or any other means, and if anything disrupts oxygen transport and delivery, the small quantity of arterial oxygen will be consumed within minutes, whereupon cellular oxygen starvation and death soon follows. Heart attacks are thus deadly because they disrupt the transport and delivery of oxygen to brain cells.

Oxygen Insanity

"The key to wisdom is this - constant and frequent questioning, for by doubting we are led to question and by questioning we arrive at the truth."—Peter Abelard.

Today's doctors and nurses are ignorant of the mechanism of oxygen transport and delivery, because they have never been taught how it works.6 Instead, they are brainwashed to believe that CO2 is toxic, while oxygen is universally beneficial. Because of this, patients are senselessly treated with 100% oxygen in almost all medical situations, even though the therapeutic benefits of breathing 100% oxygen are negligible. This is because hemoglobin in arterial blood emerging from the lungs is already 100% saturated with oxygen. You cannot improve 100%.

The mechanism of oxygen transport and delivery is extremely efficient and effective. The lungs are intensely innervated with a fine mesh of autonomic nerve endings which regulate pulmonary blood flow to match pulmonary ventilation. This optimizes hemoglobin saturation with oxygen as blood passes through the lungs. Hemoglobin in red blood cells binds avidly to oxygen, and it carries 99% of the oxygen saturated in arterial blood. The remaining 1% of blood oxygen is dissolved in blood plasma, which is insignificant. Thus, the mindless mania for using 100% oxygen as a therapeutic maneuver is an example of medical insanity that accomplishes little other than to create a dangerous fire hazard [14-16].

What does improve tissue oxygenation is breathing small concentrations of carbon dioxide. This releases oxygen from hemoglobin as blood passes through capillary beds and elevates the partial pressure of oxygen in organs and tissues. In contrast, CO2 depletion, whether caused by spontaneous or mechanical hyperventilation, prevents the release of oxygen from hemoglobin, causing oxygen starvation in organs and tissues. Thus, the nearly universal habit of hyperventilation confers no benefits and is inherently harmful and potentially dangerous.

Bacterial Oxygen Toxicity

Pasteur's hypothesis that airborne microbes because bacterial infections was extremely controversial in his time, because other researchers didn't believe that microbes could survive in living tissue [17]. They had a point, and Pasteur's ideas prevailed largely because of his talent for showmanship, luck, and falsified research that wasn't revealed until his last living relative finally made his research notes public in the 1970's. What wasn't understood in Pasteur's time is that most bacteria cannot survive in the oxygenated tissues normally maintained by the vertebrate mechanism of oxygen transport and delivery,6 even though numerous bacteria, Archaea and Eukarya thrive in the oxygen poor fecal material in the human bowel, where their activities are beneficial. Most serious and stubborn human bacterial infections are caused by a relatively small number of "facultative anaerobes" that can survive in poorly perfused and oxygenated tissues, such as prostate, bone, ligaments, tendons, adhesions, and scars.

How Crile's Treatment Cured Infections

With the help of modern research information, we can now understand how Crile's morphine treatment cured infections. Morphine reduces respiratory drive, which accumulates CO2 within the body [18]. This has negligible effect on the "loading" of oxygen onto hemoglobin as blood passes through the lung, because hemoglobin binds avidly to oxygen, and autonomic balance matches perfusion to ventilation in pulmonary alveoli, so that arterial blood emerging from the lung remains fully saturated with oxygen despite illness, CO2 supplementation, or hypoventilation [19].

Normally, the mechanism of oxygen transport and delivery delivers oxygen to tissues faster than cells can consume it. Thus, it maintains tissue oxygen levels that kill most microbes except for "facultative anaerobes" that can tolerate oxygen toxicity better than most other bacteria [20]. Narcotics depress respiratory drive, which has little effect on arterial oxygen saturation, but the reduced respiratory drive accumulates CO2 body reserves, which exaggerates the release of oxygen from arterial blood and elevates the partial pressure of oxygen in organs and tissues above normal, which kills even the facultative anaerobes. In addition, morphine inhibits harmful nociception that closes the capillary gate, elevates microvascular flow resistance, and undermines microvascular perfusion. This combination of improved tissue perfusion and oxygenation is all that is needed to kill the "facultative anaerobes," which explains the success of Crile's morphine treatment.

The therapeutic properties of carbon dioxide were well understood and widely utilized at the turn of the previous century [10]. Why have we forgotten its benefits? If CO2 supplementation were combined with modern antibiotics, it would improve both the potency and penetration of the antibiotics and abolish the problem of "antibiotic resistance."

Today, both narcotics and carbon dioxide are persistently vilified by mass media propaganda as toxic and dangerous. Why? When properly managed with medical understanding, they are perhaps the most powerful and practical treatments known to medicine, especially when they are applied in synergistic combinations. I have published the history of how this happened elsewhere [10,12,21].

My Personal Experience with Facultative Anaerobes

Many years ago, my bladder was catheterized because I couldn't urinate after knee surgery. This infected my prostate with a facultative anaerobe called "proteus Mirabilis." For the next 20 years I was afflicted with repeated bouts of infectious prostatitis at roughly two-year intervals. I consulted every urologist I knew and followed their recommendations to the letter, but to no avail. The antibiotics they recommended always halted the acute infection, but another attack would follow two years later. On two occasions I was hospitalized for intravenous antibiotic treatment, with the same result. I became increasingly alarmed because sepsis can limit life span. I knew that prostate tissue is poorly perfused and oxygenated, so I reasoned that the problem was that the antibiotics couldn't "penetrate" to reach the caus-

ative bacteria hidden within the poorly perfused prostate. I knew that EDTA used for chelation therapy is a powerful, short-acting anticoagulant, and I reasoned that combining intravenous EDTA with intravenous antibiotics should open the capillary gate, improve tissue perfusion, enhance the "penetration" of the antibiotic, and enable it to kill the offending bacteria. So, I obtained permission from my employer and visited his operating room on a Sunday morning with my girlfriend, who was a nurse. I established my own intravenous access and treated myself with EDTA until I confirmed its anticoagulant effect by drawing a sample of my blood and observing that no clots formed in the sample. Then I treated myself with a generous dose of cefazolin, a broad-spectrum antibiotic. That evening, I experienced an episode of "chills and fever" which probably resulted from the release of killed bacterial debris from the prostate into systemic circulation. The treatment worked, and I have never experienced another attack of prostatitis.

In retrospect, I believe there was an even better option: carbon dioxide, which not only opens the capillary gate and optimizes tissue perfusion but also releases oxygen from the hemoglobin molecule in blood, which elevates tissue oxygen levels above normal and enhances the oxygen toxicity that kills the facultative anaerobe bacteria. Thus, the therapeutic effects of carbon dioxide should not only enhance the penetration of modern antibiotics, but also their potency. Therefore, I hypothesize that combining carbon dioxide supplementation with narcotics, anticoagulants, and intravenous antibiotics offers a safer, simpler, and better means to quickly eradicate stubborn bacterial infections, including peritonitis, sepsis, acne, osteomyelitis, gas gangrene, MRSA, infectious prostatitis, bedsores, necrotizing fasciitis, and so forth. These treatments should be still more effective if they were combined with hyperbaric chamber technology, which further exaggerates the release of oxygen from hemoglobin into tissues [22].

Can you imagine what it would be like if you went to an emergency room suffering from infectious prostatitis, decubitus ulcers, necrotizing fasciitis, syphilis, chlamydia, sepsis, Lyme disease, gas gangrene, infected stasis ulcers, or diabetes related infections and were treated with a dose of intravenous antibiotics and narcotics and then placed in a hyperbaric chamber filled with 5% Carbogen (5% CO2 mixed with 95% oxygen in a pressurized tank) for an hour and subsequently sent home fully cured? Ditto for heart attacks and strokes?? Alternatively, when hyperbaric chambers are unavailable, bacterial infestations could be quickly and safely eradicated by combining general anesthesia with elective endotracheal intubation supplemented with narcotics, antibiotics, and anticoagulants.

Tuberculosis

Unlike "facultative anaerobes" tuberculosis bacilli thrive in oxygen and are difficult to treat because they induce a "caseation" reaction that produces a protective coating of soluble fibrin that frustrates antibiotic penetration. Theoretically, anticoagulants such as EDTA could dissolve the soluble fibrin and enhance the ability of tuberculosis medications to kill the offending bacteria, but doctors are reluctant to treat tuberculosis patients with anticoagulants for fear of releasing the tuberculosis bacillus into systemic circulation and worsening the infestation. This reasoning may be counterproductive, because in theory, anticoagulants should help to disintegrate the caseating lesions, enhance antibiotic penetration, and eradicate the offending microbes.

Viruses

Viruses are not microbes, and they are not directly affected by oxygen. Unlike microbes, which are independent, free-living cells, viruses are obligate intracellular parasites that lack DNA [23]. They replicate their RNA by hijacking intracellular mechanisms. Antibiotics don't affect viruses, but vaccinations can induce effective immunity that prevents their infestations. In contrast, antibiotics affect bacteria, but immunizations are not effective for preventing bacterial infections.

Stress theory suggests that chelation therapy might offer an effective treatment for viruses, including the weaponized COVID coronavirus. Viruses are vulnerable to Ca+ depletion, and EDTA binds avidly to Ca+. Thus intravenous treatment with EDTA, trisodium citrate, or magnesium sulphate might offer a universal means to paralyze virus activity, disrupt viral attacks, and enable the body to eradicate the inactivated virus particles from the body. I so hypothesize [24].

Imagine what it would be like if you could visit your local hospital or clinic at the first signs of the common cold and be treated with a single session of chelation therapy that disrupted the viral infestation, and allowed the body to mount a natural immune reaction to the virus and sweep the offending virus particles from your body while you proceeded with your life free of this nuisance?

Summary

Antibiotics alone cannot reliably and efficiently control and cure stubborn bacterial infections, but the potency and penetration of modern antibiotics can be substantially enhanced by using combinations of the following measures:

- Elective endotracheal intubation to secure the airway, enable measurement of inhaled gas mixtures, provide respiratory assistance when needed, protect health care workers from contamination, and contain the spread of contagions.
- ½ MAC general anesthesia to eliminate harmful nociception due to anxiety and fear
- Treatment with modern synthetic narcotics to inhibit harmful nociception and maintain exhaled CO2 in the range of 50-100 torr to optimize tissue perfusion and bactericidal oxygenation.
- Anticoagulation with EDTA (chelation therapy), MgSO4, or trisodium citrate to optimize antibiotic penetration
- Transcutaneous O2/CO2 monitoring to confirm the partial pressure of oxygen in tissues in the range of 50-100 torr to maximize bactericidal oxygen toxicity
- Antibiotics appropriate to the specific bacterial infestation.
- Hyperbaric chamber treatment with 5% Carbogen to maximize bactericidal tissue oxygenation.

Conclusion

Stress theory has always promised safe, simple, efficient cures for all forms of disease. This essay has explained how safe, comfortable, efficient and inexpensive combinations of anesthesia,

analgesia, anticoagulants, antibiotics and hypercarbia can efficiently eradicate stubborn bacterial infections and eliminate "antibiotic resistance" far more effectively than antibiotics alone. Future essays will explain how similar treatments can control and cure cancer, critical illnesses, chronic diseases, and heart disease.

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