

Nasal Disinfection Managing Upper Respiratory Infection Reveals the Detriment of Autonomic Nervous System Ensuing Neurodegeneration Develops Neuropsychiatric Disorder or Systemic Hypometabolism Responsible for a Variety of Idiopathic Disorders

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Abstract

As a representation of Upper Respiratory Infection (URI, herein context refers to viral) COVID occasions us to study relevant subjects. Whereas management draws on lower temperature for breach bio-barrier lining on nasal mucosa to exhibit virucides into epithelia thus a broad-spectrum sterilization serves a far-reaching clinical significance well established. Besides curing COVID or Long COVID, even more interesting is a cohort who recovered from myriad idiopathic disorders they already suffered before epidemic 2019; therefore, a novel pathogenesis is acquired in exposure for abusing a traffic that spans nasal mucosa and ventral brain where harbors Autonomic Nervous System (ANS). Neuropathological, the novel framework presents itself with a perfect compatibility of uptake myriad evidence contributed from multiple ways including Laboratory, Radiology, and Semeiotics; the historical or present; or, longitudinal and across-section, particularly citing those hallmarks spotlighted in COVID or Long COVID between which grounding on their several clinical contexts, there thus happens to so-called gaps yielding refers to undermining current Etiology from which a variety of postulations proposed in attempt to maintain the primary pathology currently recognized, but the outcome is long fully controversial due to arcane that URI a focal inflammation how does it disrupt systemic autoimmunity that can develop myriad illnesses, acute or chronic. In our pathogenesis, this autoimmune disorder is not more than a cascading result from systemic hypometabolism that most often is reckoned in relation to Alzheimer's or Parkinson's disease or certain endocrine failure. This detriment of systems can be externalized with existing pathologically central ANS by its atrophy and thus dysfunction following locally interstitial concentration of sugar pathologically escalating. This pathologically causative link is distinct from ingrained conceptions in favor of postulation of viral direct invasion or aberrant autoimmunity incited up for implicated lesion. Therefore, we spell out any pathological agent not only URI is able to amplify its virulence and perniciousness through host body in which myriad organs may thus fail in these correspondingly disorders contrasting with that have long been recognized idiopathic. In this overview, we encompass this novel finding to profile our management, evidence, or arguments relevant to some challenges that have long puzzled people; of course including future envisage, too. From which, an interesting measurement is developed with Magnesium salt used to assess the nasal condition during which procedure, these cations into cranium to access to ANS is observable in clinic, for which medication, a dream comes true of applying magnesium agent to relieve the neuropsychiatric stresses.

Keywords: Upper respiratory infection treatment; Ruan YuHua syndrome; Neuropsychiatry; Neurologically systemic hypometabolism; Autonomic nervous system condition; Autonomic deficit or obstruction; Ruan Xin magnesium trial; Psychosis; Systemic metabolic disease; Type II diabetes mellitus.

Citation: Tan Y. Nasal Disinfection Managing Upper Respiratory Infection Reveals the Detriment of Autonomic Nervous System Ensuing Neurodegeneration Develops Neuropsychiatric Disorder or Systemic Hypometabolism Responsible for a Variety of Idiopathic Disorders. Med Discoveries. 2025; 4(8): 1271.

Niche and compatibility

Until 2019, URI as an ailment that at least leaves to public a no bad impression with a comparatively lower either mortality burden or risk of exacerbating underlying disorders, and which serious symptom commonly is not more than a runny nose or congestion of airway within a week when, people are able to relieve or recovery after symptomatic management.

To this nice figure, some researchers hold dissent whose study [1] emphasizes a statistical significance shapes the correlation of flu vaccination available for reducing the mortality burden of myocardial infarction; nevertheless, there appears to anything but making clear that two of pathological niche.

The world have been plagued by epidemic of COVID or last-ing Long COVID since 2019 that recalls the 1918-1919 when Spanish flu overran likewise through the world, comparing to what mandated was "Wear A Mask or go to jail" in those years, a bit of humor is what nowadays people reckon with still so, although the modern biotechnology including vaccinations and drugs today has already taken an incredible advance than past; against covid, in our expectation, till now, both end up rendering their performance as a makeshift a shade of better than shiftless exuding a flavor of Sisyphean mission. The difficult or obstructions in management gradually emerged [2,3] if encapsulate these which failure may relate to segregating the patho-genetic strains for further determine the share of pathologi-cal injury every pathogen contributes that is relevant to pilot medication which qualification setting for volunteer's recruiting therefore becomes a challenge that absolutely can undermine the resultant credibility.

Alternatively, we have to agree that when babies in gesta-tion, they have been in wrestling with URI in which, these cul-prits had been conferred with facility of air-born by harbored in aerosol or droplets billion years ago. And, it is well-known that this pathogenic transmission is not only limited of anthro-pocentrism but capable of anthrozoosis *e.g.*, coronavirus or H5N1 for which *vis-à-vis* contagion, we ourselves unlikely al-ways keep a safe distance off each other for prevention.

Treat of URI management, nasal rinsing protocol presents it-self competent in four niches: Swiftly subdue acute symptoms onset against pathogen's inherent bio-behaviors in nasal lining. Second is wide-spectrum and cheap virucides applying for that once breach bio-barrier that faithfully defends nasal epithelia; moreover, the sterilization working mainly concentrates on the solid capsid of virus assembling or viral replication in cytoplas-mic reticulum. Besides lower cost in favor of daily hygiene, safe with less side-effects can realize management with the largest coverage in demography contrasting with vaccination or drugs.

Washing nasal cavity for disinfection may be presented with-out species tropic or strain tropic. Whereas the *in vitro* [4] in which Delta and Omicron are observed, their infectious modus is acquired in exposure: Viral spreading in lining primarily relies on drifting along with flowing snot for themselves without self-motile rather than people generally worry or guess of trespass into host's cellular neighbors through two clingy walls. With fre-quently egress from infectious cells and entry into healthy ones that leaves a window of exposing themselves in snot that also reveals viral surviving strategy that evades a cleaning mecha-nism of sweeping epithelium out of mucosa for cellular apop-tosis in serving for viral replication shop; during when, rinsing is conferred not only swiftly reducing the viral load in cavity

equal to suppress inflammation that likely violently disrupts pa-tients' physiology withal, after all *in esse* viral shedding, URI likely extends to implicate the pulmonary airways which clinic significance is well established for possibly progression of viral pneumonia to which pernicious is inducing cytokine storm.

In fact, coronavirus has already presented a constellation of URI viruses with analogue complications. Maybe, since credited to this reason withal huge investment has been in attempt to expedite the covid epidemic to end, researchers however were rather optimistic: By the help of successfully subduing COVID people can succeed to remove these disorders URI mounted [5] over time.

Yet, a sounding idea is still far away from successful. The first hurdle is lack of a proper pathogenesis to characterize COVID or Long COVID; conversely, for this aim, myriad established postu-lations meet with their several implausibility for incompatible among critical evidences, according to several clinical contexts. Talk of the failure, someone ascribes to nothing but the critical evidence absent. Actually, these gaps among evidences com-monly imply a novel finding other than current mainstream up-holds.

Trans-bio-barrier

For exogenous washing nasal lining, we immediately are in for two challenges. One is the parameters relevant to treating safe; another, how to exhibit agents on mucosa by the way of rinsing in which many designers so much as rule out the exis-tence of nasal mucus.

A photograph seen in Ribbeck Lab [6] that displays a fibrous network in white like cotton whereas, it is a snapshot at mu-cus in nanometer resolution, as a variety of bio-gel where these interweaved fibers are monomer of glycated protein. Through this figure, the primary impression can refer to screening mis-sion the mucus must accomplish; meanwhile enormous mi-crobes perch on these filaments.

Mucus extensively distributes in many varieties of lining in body as *film* coating facing-milieu surface of lumen meanwhile as an interface plays a vital role to cope with various stresses outside inflicts for lumen exposure, relevant to our survival. Within different organs, the requirements in mucus may be var-ied. Such as in enteric lining [7] may be an ecological communi-ty with nutrients uptake or as being a coral like in sea to harbor particles including immune agents and probiotics; in contrast, without uptake anything, nasal cavity only maintains a stronger protection.

In nasal lining, there are actually existing two types of mu-cus, one is watery the snot goblet cell excretes; another is film composed of mucin secreted by epithelia to cover about 95% surface of lumen. The rest 5% region is olfactory [8] at the top of nasal cavity merely draws on a deal of snot as washing defense.

The mucin monomer as essential component besides like bottle brush thus in a porous structure referring to screening function whereas; via with a huge amount interweaving, a per-fect bio-shield thus be well built up [8]. Nevertheless, that is not enough to prevent anything from accessing to mucosa, through these pores an electrostatic field generated by chemical bonds between external cations and internal acid roots with negative polars both in place [9] give rise to electrostatic force repuls-ing anything that tries to approach the shield. Accordingly, the mucin film as being a bio-barrier presents with double traits,

hydrophobic and oleophobic. Consequently, even if water, it cannot penetrate; on the other hand, film as a bed it can effortlessly bears upside snot erosion.

From a facet, robust mucous defense in bio-film elucidates why viral invasion circumvents through cilia or villa rather than direct through cytomembrane. Try to mimic viral capsid for exterior modification, some researchers intend to develop smart drug capsules [10] for deliver medication into nasal epithelium, but even now, we have not referred to any successful report. Other than this way, we adopt low temperature ($-3\sim 0$ degrees Celsius) via coldly hardening these molecules thus structurally centripetal collapse to yield a deal of cracks in film for prime agents delivering. Our measure should conduce to restore molecular resilience or less destruction on electrostatic system while cavity temperature recovers.

Consequently, we can understand that normal saline 0.9% NaCl (w/v) washing which safe volume can be approaching to endless for salty concentration as same as in snot without injuring tissues. And, these perceptions over mucus provides a wide scope for design rinsing management.

Virucide

Breach mucous barrier is now known as a transient window opened for virucide exhibition on nasal mucosa during when, much more sodium can be imported to accelerate infectious cells into apoptosis [11], well understood by the way, that virions inside died epithelia are removed off mucosa. To ethanol its instead of cholesterol inserted into viral capsid in assembling can give rise to defect pores yielding so that such ill virus will be inactivated [12] for its core RNA leaking while virosome exposes itself in snot where harbored trillion agents [13] therein some are ruthless and living on nucleic acid.

Now, we recommend the solution comprising of 2.5-3% (w/v) NaCl and 5% (v/v) ethanol for sterilization; to olfactory region, adopts in a relatively wide range--NaCl, 2-7%; moreover, keep warm saline in *fever temperature* (37-42 degrees Celsius) conduce to extort snot to enhance cleaning; carefully use ethanol in 0-5% that likely hurts neuroepithelial tissue though, according to our practice. Of course, other parameters involved to operational time or additional washing or posture of head, in these options, note that a mistake likely compromises treating efficacy a lot-[14].

The interesting question is what decides salt parameter and why double that number rather than [12] explicitly demonstrates 1.2% obtained in 100% disinfection efficacy?

Note that, safe exhibiting these virucides comes likewise important in management since we found agent's negative affection is absolutely able to exceed nasal cavity, interestingly.

Innocent virus

However, a virtual clearance between gel-barrier and mucosa where may be perfused with saline-ethanol solution in URI management of which, how the osmotic does with either the effect or exhibition safe. Herein, define isotonic as the baseline with NaCl 0.9% (w/v) that equal to in the endoplasm.

When *hyperosmotic* doubles baseline or beyond thus yielding difference of osmotic pressure against transmembrane of nasal epithelium may transfer the sodium into endoplasm from clearance; inversely, water outlet from endoplasm in attempt to dilute external salty. Two inverse streams signal a physical

mechanism activated aims to trade-off in/outside osmolality. Within clearance, fluid volume is inevitably increasing with which, the liquidous bulging pressure against bio-film varies; when reaches a critical and beyond; the bio-film intactness cannot hold and thus torn up; through which breaches the physical force makes, ethanol is discharged into nasal lining thus epithelial uptake stops.

Apparently, *baseline* implies no pressure difference generated to drain ethanol out of clearance thus entirely epithelial uptake. In our practice, patients thus suffered a suspicious nuchal pain persisting for hours. An interesting lesson is absolute in *hyposmolality* for without salt in June 2024. With 50 ml liquor (5%) as cold solution, resulted in not only definitely nuchal persisting anguish but severity is ataxia—unable to walk straight at 12 hours that often signals cerebellum malfunction—now, exposed to ethanol—fortunately, without alcoholism; nor signs for CNS (central nervous system) injured. Obviously, aseptically edematous for excessive water into epitheliums is primary factor responsible for mediate ethanol into cerebellum. We call this neurological phenotype Ruan YuHua Syndrome (RS) that refers to a physiological pathway presented among nasal mucosa and, ventral brain and inferior (VBI); the latter, which anatomic region should cover from front lobe to infratentorial region including cerebellum and brain stem.

The interesting questions should involve that what is the solid tube to undertake this transcranial traffic in RS, and what it transports, and what is the RS significance in clinic and its far-reaching impact for future research?

In anatomy, VBI which location in cranium has been naturally closed to a venous network in which double cavernous sinuses mark the portal of veins into cranium bottom and with falx and tentorium as basic rack to extend the cranial travel that has long puzzled people, why it does so? Thus far, we know nothing but possibly brings thrombus for maxilla-facial inflammation. Is this vasculature the role of trafficking system in RS framework, thus far unknown.

Well, how to anatomize this novel finding? From Radiology, with dynamic scanning brain [16], the early study (2004, as far as we can find) had noticed a gap emerges among myriad evidences that the pathological images over atrophy and hypometabolism concurs in VBI of patients who were diagnosed suspicious encephalitis with preponderance of clinical manifestations. These cases inconsistent with Etiology is cerebrospinal fluid testing which hallmarks indicates no pathogens contacting with CNS.

The same oxymoron reoccurs in today study on COVID although during last several years adopts the new-brand imaging modalities including MRI (magnetic resonance imaging), SPECT (single-photon emission computed tomography), and PET (positron emission tomography). Report from [17], among those cases the most mentioned morbid region is VBI still with hypometabolism and atrophy presenting a constellation of past suspiciousness for cerebrospinal fluid testing still rare positive that likewise signals virus can play magic in CNS.

However, understand what is RS function and what it transports, can be the key to discover the truth. The first we postulate RS serves for a physiological trafficking to deliver *glucose*, whom has been proven as the core material nervous energy metabolism including ANS. A better corroboration is high sugar underscored in cerebrospinal fluid that is rather common for

seen among COVID patients even more capable of discriminator applied in clinical severity scale [15]; whereas in Etiology, this hallmark most often is presented in diabetes or cranial infection brain thus into hypermetabolism.

But why the creator places such machine in our body? The up side is obvious that this fashion of glucose delivery to VBI extents higher efficiency than depends on circulatory system. Since there may be some special requirements correlated with viscera in order to coordinate body movement or quick response in presence of varieties of stresses, the frequent demand of energy supply in time from ANS that as the headquarter of autonomic system to regulate viscera metabolism by its transcranial broadcasting, thus generates. From another perspective, the down side is salient that equal to expose VBI to external milieu; that naturally calls for the bio-barrier defense is so hard.

Consequently, no magic, merely is abusing RS to pathologically transfer overmuch glucose that negatives the current postulations about neuropsychiatry in URI that is yielded on the ground of two main premises including viral entry into cranium or ever enough contact to induce aberrant autoimmune response [18] occurs. Therefore, there most often happens to an awkward called gap in our etiology that researchers always have conclusive evidences spring out to defend viral innocence in presence of the preponderation from other ones.

In one word, there is a pathologically cascading interaction, we denote this phenotype by *Autonomic Deficit or Obstruction* (ADoO) —setting out from nasal inflammation, via abusing RS the physiological pathway implicates ANS as a pathological portal to exaggerate pathological influence through body. The detriment of ANS is induced by high interstitial sugar thus which neurons are implicated to themselves atrophic and hypometabolic both contribute a progressive neurodegeneration that upsets and brings organs into progressive failure, so much as have long been attributed to idiopathic.

Discussion

For profile the URI deleteriousness, we may have two primary aspects discussed that one is within respiratory tract and, another relevant to neuropathology and involved.

Well, the first is nasal rinsing which clinical significance is well established for being an easily home remedy in favor of daily nasal disinfection—when outpatients with acute URI onset, according to researchers' caveat that severity is most often decided by the viral load in nasal cavity; motivated to clean nasal cavity aiming to subdue inflammation meanwhile hold back its progression from into lower trachea and its bronchioles really does matter more than does against time in waiting for a variety of medicine examinations ahead of prescription or hospitalized admission; presently, medical procedure always rules you so. Only just an improvement is this on treatment, likely rescues these people who, nevertheless without URI seizure.

Regrading to definition of RS or ADoO, the far-reaching significance is understanding any factor including the iatrogenic may make up ADoO so as long available to incite nasal mucosa into inflammation; that means myriad pathogens residing in our nasal cavity can together share ADoO to contribute an accruing pathology thus gives rise to a challenge in clinic how to precisely calculate the share doing anyone, as though SARS-CoV-2 and its mutations, however we believe, should responsible for the biggest size or virulence among these suspicious virions.

Therefore, the mortality burden reported in California where patients living in, the 18-49 age-group assumes occupying 53.1% into all deaths in diagnosed Long COVID [19] that indicates epidemic accelerates such an accruing pathological injury: In the foreseeable future, if no longer reaches out to control URI, it would not be an exaggerative matter that the common disorders extending prevalence and individual aggravated; the chronic diseases extending to lower age; and the psychosis extending, more general in childhood or teenage.

To shed light on URI leading to neuropathological injury, the common cases are the detriment of medulla oblongata in VBI, meanwhile involves the cranial portal of nervous communication of afference between central neurons and peripheral ganglia. This portal in disorder can lead to distort these bio-electronic signals in transmission that is well explains the myalgia encephalomyelitis why actually is hallucination with pseudo-distal-lesions; for find out the putative infectious foe who contacts with medulla, people have spent half centuries to ferret about.

Certainly, VBI disorder is absolutely serious to systemic metabolism for what it sustains not only the axis of pituitary-and-hypothalamus that rules systematical hormone regulation, but the vagus nerve releasing bioelectric impulse for manage viscera activity. So, of two in organic disorder, it can lead to a neurologically systemically hypometabolic is inferable; furthermore, if peruse reports [20,21] over Long COVID syndromes, which complications including chronic exertional fatigue or "brain fog" or even to cardiovascular diseases, almost able to be uniformly externalized to in metabolic disorder, according to current Etiology.

As a result of systemic hypometabolism, autoimmune component thus would compromise and as a big bonus rewards viruses and their contribution at ADoO. That also may imply a deficiency of a variety of metabolizable stuffs thus glucose metabolism interfered with and declines in CNS. In molecular level, a pathological cascading reaction may be established: The discrepancy on quantity of energetic supply is likely responsible for a qualitative alteration due to incapacity of normal disposal of toxic peptides produced from cytoplasmic physiological process; now precipitating in cells instead of dissolved and then discharged; as a result of aggradation, it triggers neurons injured or aggravated into premature apoptosis [22], besides malfunction. To such a variety of neurodegenerative diseases like Alzheimer's and Parkinson's disease; Amyotrophic Lateral Sclerosis; their differences to one another are not more than just presented where lesion is.

In children, who suffer Autism or Psychosis. The interested is report of viral invading neonatal CNS is likewise rare; and the maternal testing also negatives the viral vertical transmission including coronavirus [26].

From now, our etiology should be not misled to hypoxia [23] respiratory infection brings; conversely, the ADoO, although asymptomatic in respiratory airway, its pernicious is still from complications that more often are said of idiopathic. Even more, it should be responsible for human senescence rather than spontaneously pathological injury in genome over time.

Eventually, based on this novel pathway accessing to VBI, we experienced a trial called Ruan Xin Magnesium Trial (RXMT) aiming to heal the injured olfactory region. We can take advantage of Magnesium Sulphate which cation is often reckoned of

good for nervous system anything but no evidence to indicate its viral disinfection. We use 0.3-1.0 g Magnesium salt to coat nose including bridge and two flares within 1 hour.

Accordingly, there relates to two effects: One is Magnesium salt this antiphlogistic avails to inhabit ADoO; on the other hand, the inflaming tissues may accelerate Magnesium cation transferred into cranium as same as glucose circumvents circulatory system. Therefore, we can have 24 hours to monitor objects when they will get drowsiness after coating. The number of clock time can be used to measure the nasal condition.

The severe case can be 10 minutes of feeling within extra comfortable or relax into drowsiness and likely simultaneously relieve the neuropsychiatric complaints including malaise, myalgia, numbness, anxiety, depressed, and so on, as well as these reports in [24] for applying Magnesium medication; besides the dermatological red rash as peripherally nervous comorbidity, recedes; moreover, in second day, coating contributes a well bowel movement.

Systemic hypometabolism

With doubtless, people concern is while relieving systemic hypometabolism from URI. Among clinical melioration, the most remarkable is Dermatology readily felt and recognized and encourages patients to insist on their URI management: Body odor diminishes and, ever chloasma or erythema or pimple all these previously manifested now recede; and appendage, hair began to recover bare region towards initial, and nails also became more softy.

Besides appearance getting younger and musculoskeletal restoring in stronger or stamina may take a par with youth level, between all, indicate energetic metabolism restoring that as well prompts catabolism elevated hepatic biodegradation thus able to decompose polypeptides completely into salts or water or resolvable small molecules for excretion in urine or perspiration.

The neuropsychiatric aspect, besides limbs paresthesia diminishes, to these senior citizens in whom, the mental improvement is manifested for they waking up from previous disorder involved to their fatigue or malaise that ever made them isolate off social interaction due to living with testy or indifferent.

The interesting is a sort of systemic hypometabolism attributed to complication of some systemic disorders, such as type II diabetes mellitus (insulin resistance): Two can be segregated.

There is a representative case at our hand. The subject who is female with her age up to 83 in 2024 and with more than two decades of diabetes and more than 18 years history of applying hypodermic insulin. Since April 2024, she accepted nasal disinfection as being personal hygiene 1 times per day against COVID.

Out of our expectations is her albuminuria the diabetic nephritis hallmark reversed from previous positive persisting at 1.5 years when she into August for her health check. The ensuing event is bold to stop her exogenous parenteral insulin because of normal endogenous level but keeps peroral tablets of Acarbose and Gliclazide. Under monitoring in hospital, she did successfully to get rid of both body odor and insulin.

Till now, surprised is she inserted olfactory hyperosmotic rinsing in her nasal management and updated the rinsing times for twice per day in April 2025, her bloody sugar which presents

closed to normal and no longer to desire unhealthy high-fat diets but either high sugar or high fat still available to make up hyperglycemia.

The important is her waking up from "brain fog" contrasts with before just as in Long COVID that can be estimated with 10 years aged [20].

The current Etiology regards systemic hypometabolism as a result from hyperglycemia which yielding homeostasis imbalance by hyperosmolality to injure myriad organs which functions thus are debilitated over time. As a result of metabolic failure wreaking premature death, the mortality is estimated over 2 million per year in the world according to WHO [24]; whereas our case sounds URI should responsible for this sequence; in contrasting to traditional postulation, hyperglycemia look like a compensation or a complication and the insulin resistance seems easily overcome not that we have long thought so.

Conclusion

We eventually have to concede URI actually is a ruthless and cunning killer to their master strategy that secretly downregulates host autoimmunity. On the other hand, these viruses lose the motivation to develop more aggressive bio-structures for reach more regions in host body that explains while host cell has not endoplasmic reticulum for viral glycosylated capsid assembling or without specific tools to aid their egress from cell, URI virions are hard to copy their presently conquering model. That is why some contracting organs are never drawn into disorder.

We define a novel pathway and a cascading interaction both are the terrible arms URI virions use to ruin our civilization. Nevertheless, we show ADoO may be a critical nexus to make a variety of Pathological factors correctly associated with each other without gaps people have long reckoned elusive.

Declarations

Funding: Not funding institution for declare.

Conflicts of interest disclosure: No conflicts of interest.

Acknowledgement: Thank my darling Xin Ruan who is brave to experience RXMT and reported what she felt though, until then, we have nothing about the hazard. About 15 minutes after coating, she drowsed. Fortunately, she only just experienced a medicine trial which comfortable possibly is the most among all past or current ones, without adverse affection.

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