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Covid 19 sequele-neuropsyciatric disorders and homoeopathy

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Abstract
SARS Cov-2 has impacted the life of people worldwide since December 2019. The majority of people have suffered from respiratory complaints along with tastelessness and anosmia. Apart from these symptoms, long continued quarantine, social deprivement, distancing, unemployment, virtual communication made people more anxious towards this disease. This resulted in numerous neuropsychiatric complaints among people, during this epidemic. the major health issues reported post COVID were anxiety, stress, insomnia, depression, PTSD, fastidiousness, forgetfulness, despair, melancholy, indifference, irritibility, anger, apprehensiveness, restlessness, suicidal tendencies among frontline workers, children, old aged people addressed with these. Homoeopathy can play a major role in the treatment of these neuropsychiatric complaints, as homoeopathy based on true fundamentals, philosophy, with proper anamnesis of each patient. Stallwarts like kent strongly believed in treatment through mental generals. In modern life most of the people suffer from psyco-somatic disorder, which typically belongs to lifestyle disorders. Regarding this epidemic situation, homoeopathy is the only safe and surest treatment option in this mental health burden arising from SARS Cov-2.

Keywords: SARS CoV-2, neuropsychiatry, homoeopathy

Introduction
COVID-19 has impacted the mental health of people around the world [1]. Emerging evidence shows neural spread of covid -19 (novel coronavirus), such as Delirium encephalopathy, olfactory disturbences, acute behavioral changes, headache and cerebrovascular accidents are its common neuropsychiatric complications [2].

AIM
To improve homoeopathic treatment regarding this pandemic in the field of neuropsychiatric complication of COVID-19

Causes of mental health deterioration in covid-19
- Social distancing [3].
- Socially excluded [3].
- Frontline workers (doctors, nurses, other health workers) [3].
- Insufficient capacity to give self-care [3].
- Excess use of alcohol, smoking [3].

Neuropsychiatric manifestations of covid-19
The central were commonest, with dizziness and headache being most prevalent. Dysgeusia, anosmia and muscle pain were most common among the peripheral symptoms. Anxiety, depression and delirium were the common psychiatric manifestations. The neurological symptoms had direct relation with the severity of the illness, serum antibody titer and blood lymphocyte counts [4].

Possible Neupsychiatric Sequale Covid -19
Impact on Children
Academics have reported that for many children who were separated from caregivers during the pandemic, it may place them into a state of crisis, and those who were isolated or quarantined during past pandemic disease are more likely to develop acute stress disorders, adjustment disorders and grief, with 30% of children meeting the clinical criteria for PTSD [5].

School closures also caused anxiety for students with special needs as daily routines are suspended or changed and all therapy or social skills groups also halted. Others who have incorporated their school routines into coping mechanisms for their mental health, have had an increase in depression and difficulty in adjusting back into normal routines.

Impact on medical workers and medical personnel
Many medical staff in China refused psychological interventions even though they showed sign of distress by; excitability, irritability, unwillingness to rest and others, stating they did not need a psychologist but more rest without interruption and enough protective supplies. They also stated using the psychologists skills instead towards the patients anxiety, panic, and other emotional problems instead of having the medical staff treat these issues [6].

Delirium and Confusional States: Impaired sensorium ranging from mild drowsiness to delirium [7].

Dysfunction of olfaction and taste sensation: During the SARS outbreak, studies have shown its affinity for the nasal ciliary epithelium [7].

Post-traumatic stress disorder
There has been a particular concern for sufferers of post-traumatic stress disorder, as well as the potential for medical workers and COVID–19 patients to develop PTSD-like symptoms [8, 9, 10].

Obsessive compulsive disorder
There has been a heightened concern for individuals suffering from obsessive–compulsive disorder, especially in regards to long-term consequences [11, 12]. Fears regarding infection by the virus, and public health tips calling for hand-washing and sterilization are triggering related compulsions in some OCD sufferers [13]. Some OCD sufferers with cleanliness obsessions are noticing their greatest fears realized [14, 15]. Amid guidelines of social-distancing, quarantine, and feelings of separation, some sufferers are seeing an increase in intrusive thoughts, unrelated to contamination obsessions [16, 17]. Especially in regards to long term consequences. Fears regarding infection by the virus, and public health tips calling for hand washing and sterilization are triggering OCD compulsions.

Suicidal tendencies
COVID – 19 pandemic has been followed by a concern for a potential spike in suicide. Due to social distancing, fear, unemployment, & financial factors.

China: on shanghai district reported that there have been 14 cases of suicide by school students so far this year. Since the central government concern the heightened post – lockdown anxiety as domestic media report a spate of suicide by young people [18].

India: there are reports of people committing suicide after not being able to access alcohol during the lockdown associated with COVID-19 pandemic in India [19].

United States: in us there was almost more than 90 cases were reported of suicide, due to prolong isolation, and stress disordres, Life style, over use of alcohol etc. [20]

More physical and neuropsychiatric symptoms:
- Morose [7].
- Despair [7].
- Muscular Weakness [7].
- Abusive Habit [7].
- Weak Memory [7].
- Weight Gain [7].
- Weight Loss [7].
- Bleeding Disorders [7].
- Acid Peptic Disorders [7].
- Unwilling To Do Anything [7].
- Loss of Interest in Anything [7].
- Melancholia [7].

Table 1: Homoeopathic Medicines and their Mode of Action

Sl No:	Name of the medicine	Action	Symptoms
1	Gelsemium	Glycine receptor Inhibition of post synaptic neurons [7].	Stress, anxiety, fright, dizziness, drowsiness, dullness, muscular weakness, general depression, apathy regarding his illness [21].
2	Opium	Central nervous system [21]	Depression Numbness, complete loss of consciousness, delirious talking, thinks he is not at home [21]
3	Agaricus	Neuro-transmitter acetylcholine [7]	Signs talks but does not answer, loquacity, indifference, fearlessness, delirium by shouting, singing, muttering [21].
4	Arsenicumalbum	Digestive tract and brain [21].	Restlessness, anguish, fear of death, of being left alone, despair, confusion [21].
5	Belladonna	Neuro-transmitter acetylcholine [21].	Hallucinations, delirium, frightful, furious rage, bites, strikes, changeableness, visual illusion [21].
6	Hyoscyamus	Neuro-transmitter acetylcholine [7].	Suspicious, lascivious mania, inclined to laugh at everything, delirium, talkative [21].
7	China	Heart and blood [21].	Apathetic, indifference, sudden crying and tossing about [21].
8	Nux vomica	Glycine and acetylcholine receptors [7].	Irritable on noises, odours; time passes too slowly, fault finders, jealous [21].
9	Aconite	Central nervous system [21].	Mental and physical restlessness, fear, anxiety, worry, fear of death, music is unbearable [21].
10	Cannabis indica	Central nervous system [21].	Excessive loquacity, time seems too long, seconds seem ages; anxious, depression, delirium, uncontrollable laughter [21].
11	Ignatia	Glycine neurotransmitter [7].	Melancholic, sad, changeable mood, silent grief, involuntary sighing [21].
12	Pulsatilla		Extremely emotional, weepy, changeable mood, claustrophobic [21].

13	Capsicum anum	Sympathetic nervous system [7].	Homesickness, sleeplessness, wants to be left alone, delirium, disposition to suicide [21].
14	Anacardium orientale	Blood [21].	Indifference, hallucination, melancholy, hypochondriasis, suspicious, easily offended, senile dementia, fixed idea [21].
15	Stramonium	Neuro-transmitter acetylcholine [7].	Loquacious, rapid changeable mood, violent and lewd, delusions about his identity, religious mania, desire to escape [21].
14	Coffea cruda	Central nervous system [21].	Nervous, restlessness, neuralgia in every part, irritable, acute senses, anguishness [21].
15	Sepia	Androgen hormone receptor [7].	Indifference, averse to occupation, irritable, dreads to be alone, indolent, very sad, suicidal thoughts [21].
16	Natrum muriaticum	Systemic [21].	Irritable, wants to cry alone, depressed, silent grief, over sensitiveness, awkward, hasty [21].
17	Aurum metallicum	Blood and CNS [21].	Hopeless, despondent, great desire to commit suicide, great fear of death, anthrophobia, over sensitiveness, irritable [21].

Mechanism of action of homoeopathic medicine

Gelsemium: Chief Alkaloid: Gelsemine (C20H22N2O2) IUPAC name: 3-ethanyl-1-methyl-2,3,3a,7,8,8a-hexahydro-1h,5h-spiro[3,8,5-(ethane [1, 1, 2] triyl) oxepino[4,5-b] pyrrole-4,3'-indol]-2'(1'h)-one [22].

Mechanism of action

It has generally potent activity as an agonist of the mammalian glycine receptor, the activation of which leads to an inhibitory postsynaptic potential in neurons following chloride (Cl-) ion influx and systemically to muscles relaxation of varying intensity and deleterious effect. Despite its danger and toxicity, recent pharmacological research has suggested that the biological activities of this compound may offer opportunities for developing treatments related to Xenobiotic- or diet induced oxidative stress, and of anxiety and other conditions, with ongoing research including attempts to identify safer derivatives and analogs to make use of Gelsemine's beneficial effects [52].

Opium: Chief Alkaloid: a) Morphine b) Codeine c) Thebaine and Papaverine Morphine (C17H19NO3) IUPAC name: (4R,4aR,7S,7aR,12bS)-3-Methyl-2,3,4,4a,7,7a-hexahydro-1H-4,4a,7,7ahexahydro-1H-4,12-methanobenzofuro[3,2-e] isoquinoline-7,9-diol

Mechanism of action: morphine is a pain medication of the opiate family that is found naturally in a number plants and animals including [23] humans It acts directly on the central nervous system (CNS) to decrease the feeling of pain. [23] Morphine interacts predominantly with the μ-δ-opioid receptor heteromer [24]. The μ- binding sites are discretely distributed in the human brain, with high densities in the posterior amygdala, hypothalamus, thalamus, nucleus caudatus, putamen and certain cortical areas. They are also found on the terminal axons of primary afferents within laminae I and II (substantia gelatinosa) of the spinal cord and in the spinal nucleus of the trigeminal nerve [24]. Morphine is a phenanthrene opioid receptor agonist – its main effect is binding to and activating the μ-opioid receptor (MOR) in the central nervous system. Its intrinsic activity at the MOR is heavily dependent on the assay and tissue being tested; in some situations it is a full agonist while in others it can be a partial agonist or even antagonist [25]. In clinical settings, morphine exerts its principal pharmacological effect on the central nervous system and gastrointestinal tract. Its primary actions of therapeutic value are analgesia and sedation. Activation of the MOR is associated with analgesia, sedation, euphoria, physical dependence, and respiratory depression. Morphine is also a κ-opioid receptor (KOR) and δopioid receptor (DOR) agonist. Activation of the KOR is associated with spinal analgesia, miosis (pinpoint pupils), and psychotomimetic effects. The DOR is thought to play a role in analgesia [24].

Agaricus: Chief alkaloid: Muscarine (C9H20NO2 +) IUPAC name: 2,5-Anhydro-1,4,6-trideoxy-6-(trimethylammonio)-D-ribo-hexitol.

Mechanism of action: Muscarine mimics the action of the neurotransmitter acetylcholine by agonising muscarinic acetylcholine receptors. These receptors were named after muscarine, to differentiate them from the other acetylcholine receptors (nicotinic receptors), which are comparatively unresponsive to muscarine. There are 5 different types of muscarinic receptors M1, M2, M3, M4 and M5. Most tissues express a mixture of subtypes. The M2 and M3 subtypes mediate muscarinic responses at peripheral autonomic tissues. M1 and M4 subtypes are more abundant in brain and autonomic ganglia. The odd numbered receptors, M1, M3 and M5, interact with Gq proteins to stimulate phosphoinositide hydrolysis and the release of intracellular calcium. Conversely, the even numbered receptors, M2 and M4, interact with Gi proteins to inhibit adenylyl cyclase, which results in a decrease of intracellular concentration of cyclic adenosine monophosphate (cAMP) [7].

Arsenicum Album: In homoeopathy arsenicum album is a solution prepared by diluting aqueous arsenic trioxide generally until there is little amount of arsenic remaining in individual doses. Arsenic trioxide was approved for medical use in the United States in 2000 [26]. It is on the World Health Organization's List of Essential Medicines [27]. Arsenic Trioxide (As2O3) IUPAC name: Diarsenic trioxide. Toxicological Symptoms: Arsenic trioxide is readily absorbed by the digestive system: toxic effects are also well known upon inhalation or upon skin contact. The first symptoms of acute arsenic poisoning by ingestion are digestive problems: vomiting, abdominal pains, diarrhea often accompanied by bleeding. Sub-lethal doses can lead to convulsions, cardiovascular problems, inflammation of the liver and kidneys and abnormalities in the coagulation of the blood. These are followed by the appearance of characteristic white lines (Mees' lines) on the nails and by hair loss. Lower doses lead to liver and kidney problems and to changes in the pigmentation of the skin. Even dilute solutions of arsenic trioxide are dangerous on contact with the eyes. Chronic arsenic poisoning is known as arsenicosis. This disorder affects workers in smelters, in populations

whose drinking water contains high levels of arsenic (0.3–0.4 ppm), and in patients treated for long periods with arsenic-based pharmaceuticals. Long-term ingestion of arsenic trioxide either in drinking water or as a medical treatment can lead to skin cancer. Reproductive problems (high incidences of miscarriage, low birth weight, congenital deformations) have also been indicated in one study of women exposed to arsenic trioxide dust as employees or neighbours of a copper foundry.

Belladonna: Chief alkaloid: Tropane (C8H15N) IUPAC name: N-Methyl-8-azabicyclo[3.2.1]octane Mechanism of Action: Tropane alkaloids have pharmacological properties and can act as anticholinergics or stimulants. Anticholinergics (anticholinergic agent) are a group of substances that blocks the action of the neurotransmitter called acetylcholine (ACh) at synapses in the central and peripheral nervous system [28]. These agents inhibit the parasympathetic nervous system by selectively blocking the binding of ACh to its receptor in nerve cells. The nerve fibers of the parasympathetic system are responsible for the involuntary movement of smooth muscles present in the gastrointestinal tract, urinary tract, lungs, and many other parts of the body [29]. Anticholinergics are classified according to the receptors that are affected: a) Antimuscarinic agents operate on the muscarinic acetylcholine receptors. The majority of anticholinergic drugs are antimuscarinics. b) Antinicotinic agents operate on the nicotinic acetylcholine receptors. The majority of these are non-depolarising skeletal muscle relaxants for surgical use that are structurally related to curare. Several are depolarizing agents.

Hyoscyamus niger: Chief alkaloid: hyoscyamine (C17H23NO3) IUPAC name: (S)-(1R,3r,5S)-8-methyl-8-azabicyclo[3.2.1]octan-3-yl 3-hydroxy-2-phenylpropanoate

Mechanism of action: Hyoscyamine (also known as daturine or duboisine) is a naturally occurring tropane alkaloid and plant toxin. It is the levorotary isomer of atropine (third of the three major nightshade alkaloids) and thus sometimes known as levo-atropine. Hyoscyamine is an antimuscarinic; i.e., an antagonist of muscarinic acetylcholine receptors. It blocks the action of acetylcholine at parasympathetic sites in sweat glands, salivary glands, stomach secretions, heart muscle, sinoatrial node, smooth muscle in the gastrointestinal tract, and the central nervous system. It increases cardiac output and heart rate, lowers blood pressure and dries secretions [30]. It may antagonize serotonin [31]. At comparable doses, hyoscyamine has 98 per cent of the anticholinergic power of atropine. The other major belladonna-derived drug hyoscine (known in the United States as Scopolamine) has 92 per cent of the antimuscarinic potency of atropine [32].

China officinalis: Chief alkaloid: cinchonine, quinidine. Quinidine: (C20H24N2O2) IUPAC name: (S)-(6-Methoxyquinolin-4-yl) [(1S, 2R, 4S, 5R)-5-vinylquinuclidin-2-yl] methanol.

Mechanism of action: Quinidine is a medication that acts as a class I antiarrhythmic agent in the heart [33]. It is a stereoisomer of quinine, originally derived from the bark of the cinchona tree. The drug causes increased action potential duration, as well as a prolonged QT interval. Quinidine acts as a blocker of voltage-gated sodium channels [34, 35] Inhibition of the Nav1.5 channel is specifically involved in its antiarrhythmic effects as a class I antiarrhythmic agent [36]. Quinidine also blocks certain voltagegated potassium channels (e.g., Kv1.4, Kv4.2, hERG, among others) [38, 39] acts as an antimuscarinic and alpha-1 blocker [37] and is an antimalarial [36]. The effect of quinidine on the ion channels is to prolong the cardiac action potential, thereby prolonging the QT interval on the surface ECG.

Nux Vomica: Chief alkaloid: Strychnine, Brucine. Strychnine (C21H22N2O2) IUPAC name: (4aR,5aS,8aR,13aS,15aS,15bR)-4a,5,5a,7,8,13a,15,15a,15b,16-decahydro-2H-4,6-methanoindolo[3,2,1-ij] oxepino[2,3,4-de] pyrrolo [2,3-h] quinolin-14-one

Mechanism of action: Strychnine is a neurotoxin which acts as an antagonist of glycine and acetylcholine receptors. It primarily affects the motor nerve fibres in the spinal cord which control muscle contraction. An impulse is triggered at one end of a nerve cell by the binding of neurotransmitters to the receptors. In the presence of an inhibitory neurotransmitter, such as glycine, a greater quantity of excitatory neurotransmitters must bind to receptors before there will be an action potential generated. Glycine acts primarily as an agonist of the glycine receptor, which is a ligand-gated chloride channel in neurons located in the spinal cord and in the brain. This chloride channel will allow the negatively charged chloride ions into the neuron, causing a hyperpolarization which pushes the membrane potential further from threshold. Strychnine is an antagonist of glycine; it binds noncovalently to the same receptor, preventing the inhibitory effects of glycine on the postsynaptic neuron. Therefore, action potentials are triggered with lower levels of excitatory neurotransmitters. When the inhibitory signals are prevented, the motor neurons are more easily activated and the victim will have spastic muscle contractions, resulting in death by asphyxiation. [40] [41]. Strychnine binds the Aplysia californica acetylcholine binding protein (a homolog of nicotinic receptors) with high affinity but low specificity, and does so in multiple conformations [41].

Aconitum Napellus: Chief alkaloids: Aconitine (C34H47NO11) IUPAC name: 8-(acetyloxy)-20-ethyl-3α,13,15-trihydroxy-1α,6α,16β-trimethoxy-4 (methoxymethyl)aconitan-14α-yl benzoate

Mechanism of action: Aconitine can interact with the voltage-dependent sodium-ion channels, which are proteins in the cell membranes of excitable tissues, such as cardiac and skeletal muscles and neurons. These proteins are highly selective for sodium ions. They open very fast to depolarize the cell membrane potential, causing the upstroke of an action potential. Normally, the sodium channels close very rapidly, but the depolarization of the membrane potential causes the opening (activation) of potassium channels and potassium efflux, which results in repolarization of the membrane potential. Aconitine binds to the receptor at the neurotoxin binding site 2 on the alpha-subunit of the channel protein [42]. This binding results in a sodium-ion channel that stays open longer. Aconitine suppresses the

conformational change in the sodium-ion channel from the active state to the inactive state. The membrane stays depolarized due to the constant sodium influx (which is 10–1000 fold greater than the potassium efflux). As a result, the membrane cannot be repolarized. The binding of aconitine to the channel also leads to the channel to change conformation from the inactive state to the active state at a more negative voltage [43]. In neurons, aconitine increases the permeability of the membrane for sodium ions, resulting in a huge sodium influx in the axon terminal. As a result, the membrane depolarizes rapidly. Due to the strong depolarization, the permeability of the membrane for potassium ions increases fast, resulting in a potassium reflux to release the positive charge out of the cell. Not only the permeability for potassium ions but also the permeability for calcium ions increases as a result of the depolarization of the membrane. A calcium influx takes place. The increase of the calcium concentration in the cell stimulates the release of the neurotransmitter acetylcholine into the synaptic cleft. Acetylcholine binds to acetylcholine receptors at the postsynaptic membrane to open the sodium-channels there, generating a new action potential.

Cannabis indica: Chief alkaloid: Tetrahydrocannabinol (THC) IUPAC name: (6aR, 10aR)-6,6,9-Trimethyl-3-pentyl-6a,7,8,10a-tetrahydro-6H-benzo [c] chromen-1-ol

Mechanism of action: THC is the principal psychoactive constituent of cannabis. Although the chemical formula for THC (C21H30O2) describes multiple isomers [44]. Dronabinol, a pharmaceutical form of THC, has been approved by the FDA as an appetite stimulant for people with AIDS and an antiemetic for people receiving chemotherapy under the trade names Marinol and Syndros [45]. The pharmaceutical formulation dronabinol is an oily and viscous resin provided in capsules available by prescription in the United States, Canada, Germany, and New Zealand. The actions of THC result from its partial agonist activity at the cannabinoid receptor CB1 (Ki = 10 nM [22]), located mainly in the central nervous system, and the CB2 receptor (Ki = 24 nM [74]), mainly expressed in cells of the immune system [46]. The psychoactive effects of THC are primarily mediated by the activation of cannabinoid receptors, which result in a decrease in the concentration of the second messenger molecule cAMP through inhibition of adenylate cyclase [47]. THC is a lipophilic molecule [48] and may bind non-specifically to a variety of entities in the brain and body, such as adipose tissue (fat) [49, 50]. THC, as well as other cannabinoids that contain a phenol group, possess mild antioxidant activity sufficient to protect neurons against oxidative stress, such as that produced by glutamate-induced excitotoxicity [47].

Veratrum album: Chief alkaloid: veratramine (C27H39NO2) IUPAC name: (3β,23R)-14,15,16,17-Tetradehydroveratraman-3,23-diol

Mechanism of action: In general, Veratrum alkaloids act by increasing the permeability of the sodium channels of nerve cells, causing them to fire continuously. Increased stimulation, associated with the vagus nerve, results in the Bezold-Jarisch reflex: hypotension, bradycardia and apnoea [51]. The neurotoxicity of Veratrum alkaloids derives from their effect on the sodium ion channels of nerve cells. They activate receptor site 2 of the voltage-dependent Na+ channel in membranes by prolonging its open state [52]. The alkaloids depolarize nerves by enhancing exchange of Na+ and K+ across the membrane [53].

Ignatia amara: Chief alkaloid: Strychnine, Brucine [54]. Strychnine (C21H22N2O2) IUPAC name: (4aR,5aS,8aR,13aS,15aS,15bR)-4a,5,5a,7,8,13a,15,15a,15b,16-decahydro-2H-4,6-methanoindolo[3,2,1-ij] oxepino[2,3,4-de] pyrrolo [2,3-h] quinolin-14-one

Mechanism of action: Strychnine is a neurotoxin which acts as an antagonist of glycine and acetylcholine receptors. It primarily affects the motor nerve fibres in the spinal cord which control muscle contraction. An impulse is triggered at one end of a nerve cell by the binding of neurotransmitters to the receptors. In the presence of an inhibitory neurotransmitter, such as glycine, a greater quantity of excitatory neurotransmitters must bind to receptors before there will be an action potential generated. Glycine acts primarily as an agonist of the glycine receptor, which is a ligand-gated chloride channel in neurons located in the spinal cord and in the brain. This chloride channel will allow the negatively charged chloride ions into the neuron, causing a hyperpolarization which pushes the membrane potential further from threshold. Strychnine is an antagonist of glycine; it binds noncovalently to the same receptor, preventing the inhibitory effects of glycine on the postsynaptic neuron. Therefore, action potentials are triggered with lower levels of excitatory neurotransmitters. When the inhibitory signals are prevented, the motor neurons are more easily activated and the victim will have spastic muscle contractions, resulting in death by asphyxiation [40, 41]. Strychnine binds the Aplysia californica acetylcholine binding protein (a homolog of nicotinic receptors) with high affinity but low specificity, and does so in multiple conformations [42].

Pulsatilla pratensis: Chief alkaloid: protoanemonin ($C_5H_4O_2$) IUPAC name: 5-Methylidenefuran-2-one

Mechanism of action: Protoanemonin (sometimes called anemonol or ranunculol) [55] is a toxin found in all plants of the buttercup family (Ranunculaceae). When the plant is wounded or macerated, the unstable glucoside found in the plant, ranunculin, is enzymatically broken down into glucose and the toxic protoanemonin [56]. It is the lactone of 4-hydroxy-2,4-pentadienoic acid. Contact with a wounded plant causes itch, rashes or blistering on contact with the skin or mucosa. Ingesting the toxin can cause nausea, vomiting, dizziness, spasms, acute hepatitis, jaundice, or paralysis [57, 58, 59]. When drying the plant, protoanemonin comes into contact with air and dimerizes to anemonin, which is further hydrolysed to a non-toxic dicarboxylic acid [56, 60]. In a study it was found that antimicrobial study of protoanemonin is present [61].

Capsicum annum: Chief alkaloid: Capsinoids, capsaicin Capsaicin (C18H27NO3) IUPAC name: (E)-N-[(4-hydroxy-3-methoxyphenyl)methyl]-8-methylnon-6-enamide

Mechanism of action: Capsinoids have an estimated "hot taste threshold" which is about 1/1000 that of capsaicin.

Many health effects have been ascribed to capsaicin and capsinoids, both anecdotally and through scientific study, including anticancer, anti-inflammatory, and analgesic activities, and weight management [62]. It is anecdotally said that hot peppers help people in the tropics "cool off." This theory is consistent with the peripheral vasodilatory effect of capsaicin that has been shown to lower skin temperature in humans exposed to a hot environment [63]. Capsaicin feels hot in the mouth because it activates sensory receptors on the tongue otherwise used to detect thermal heat [64]. This receptor is called Transient Receptor Potential Vanilloid 1 (TRPV1). TRPV1 receptors are also located in the gut and in other organs [65]. Stimulation of TRPV1 receptors is known to bring about activation of the sympathetic nervous system (SNS) [66]. Capsaicin has been shown to increase fat burning in humans and animals through stimulation of the SNS [67]. Like capsaicin, capsinoids activate TRPV1 receptors [68]. Although they are not hot in the mouth. Capsinoids cannot reach the TRPV1 oral cavity receptors, located slightly below the surface in the mouth, because of structural differences from capsaicin. On the other hand, both capsaicin and capsinoids activate TRPV1 receptors in the same manner [69]. Research has indicated that the TRPV1 receptors in the gut are important for the metabolic effects of capsaicin and capsinoids [70].

Anacardium orientale

Chief alkaloid: bioflavonoids (C30H22O12) IUPAC name: (2R,3R)-8-[(2S,3R)-5,7-dihydroxy-2-(4-hydroxyphenyl)-4-oxo-2,3-dihydrochromen-3-yl]- 2-(3,4-dihydroxyphenyl)-3,5,7-trihydroxy-2,3-dihydrochromen-4-one

Mechanism of action: Flavonoids are poorly absorbed in the human body (less than 5%), then are quickly metabolized into smaller fragments with unknown properties, and rapidly excreted [71, 72]. Flavonoids have negligible antioxidant activity in the body, and the increase in antioxidant capacity of blood seen after consumption of flavonoid-rich foods is not caused directly by flavonoids, but is due to production of uric acid resulting from flavonoid depolymerization and Inflammation has been implicated as a possible origin of numerous local and systemic diseases, such as cancer [73] Cardiovascular disorders [74] diabetes mellitus [75] and celiac disease [76]. Excretion [71, 77]. Clinical studies investigating the relationship between flavonoid consumption and cancer prevention/development are conflicting for most types of cancer, probably because most human studies have weak designs, such as a small sample size [71, 78]. There is little evidence to indicate that dietary flavonoids affect human cancer risk [71]. Among the most extensively studied of general human disorders possibly affected by dietary flavonoids, research on cardiovascular disease has not provided sufficient evidence of an effect of flavonoids, as of 2016[71]. Reviews of cohort studies in 2013 found that the studies had too many limitations to determine a possible relationship between increased flavonoid intake and decreased risk of cardiovascular disease, although a trend for an inverse relationship existed [71, 79].

Stramonium: Chief alkaloid: Tropane (C8H15N) IUPAC name: N-Methyl-8-azabicyclo [3.2.1] octane.

Mechanism of action: Tropane alkaloids have pharmacological properties and can act as anticholinergics or stimulants. Anticholinergics (Anticholinergic agent) are a group of substances that blocks the action of the neurotransmitter called acetylcholine (ACh) at synapses in the central and peripheral nervous system [29]. These agents inhibit the parasympathetic nervous system by selectively blocking the binding of ACh to its receptor in nerve cells. The nerve fibers of the parasympathetic system are responsible for the involuntary movement of smooth muscles present in the gastrointestinal tract, urinary tract, lungs, and many other parts of the body [30]. Anticholinergics are classified according to the receptors that are affected:

a) Antimuscarinic agents operate on the muscarinic acetylcholine receptors. The majority of anticholinergic drugs are antimuscarinics.
b) Antinicotinic agents operate on the nicotinic acetylcholine receptors. The majority of these are non-depolarising skeletal muscle relaxants for surgical use that are structurally related to curare. Several are depolarizing agents.

Coffea cruda: Chief alkaloid: Caffeine, Putrescine, Theophylline, Trigonelline Caffeine (C8H10N4O2) IUPAC name: 1,3,7-Trimethylpurine-2,6-dione

Mechanism of action: Caffeine is a central nervous system (CNS) stimulant of the methylxanthine class [80]. It is the world's most widely consumed psychoactive drug [81]. Unlike many other psychoactive substances, it is legal and unregulated in nearly all parts of the world. There are several known mechanisms of action to explain the effects of caffeine. The most prominent is that it reversibly blocks the action of adenosine on its receptors and consequently prevents the onset of drowsiness induced by adenosine. Caffeine also stimulates certain portions of the autonomic nervous system. In the absence of caffeine and when a person is awake and alert, little adenosine is present in (CNS) neurons. With a continued wakeful state, over time adenosine accumulates in the neuronal synapse, in turn binding to and activating adenosine receptors found on certain CNS neurons; when activated, these receptors produce a cellular response that ultimately increases drowsiness. When caffeine is consumed, it antagonizes adenosine receptors; in other words, caffeine prevents adenosine from activating the receptor by blocking the location on the receptor where adenosine binds to it. As a result, caffeine temporarily prevents or relieves drowsiness, and thus maintains or restores alertness [82].

Sepia

Source: Cuttle fish Order: Sepiida Toxicological effects: Some cuttlefish are venomous. The genes for venom production are thought to be descended from a common ancestor [83]. The muscles of the flamboyant cuttlefish (Metasepiapfefferi) contain a highly toxic, unidentified compound [84]. As lethal as that of a fellow cephalopod, the blue-ringed octopus [85]. Studies are said to indicate cuttlefish to be among the most intelligent invertebrates [84]. Cuttlefish also have one of the largest brain-to-body size ratios of all invertebrates [84]. INK: Like other marine mollusks, cuttlefish have ink stores that are used for chemical deterrence, phagomimicry, sensory distraction, and evasion when attacked [21]. Its composition results in a

dark colored ink, rich in ammonium salts and amino acids that may have a role in phago mimicry defenses [21]. The ink can be ejected to create a "smoke screen" to hide the cuttlefish's escape, or it can be released as a pseudomorph of similar size to the cuttlefish, acting as a decoy while the cuttlefish swims away [21].

Natrum muriaticum

Chemical formula: NaCl IUPAC name: Sodium chloride Toxicological symptoms: Salt poisoning typically results in a feeling of confusion and jitteriness; more severe degrees of intoxication can cause seizures and coma. Death can result if medical intervention is not forthcoming. These symptoms are generally a consequence of hypernatremia—an abnormally high sodium level in the blood [7]. Early on, the intoxicant will cause a strong feeling of thirst, followed by weakness, nausea, and loss of appetite. More severe symptoms ensue, including confusion, muscle twitching, and bleeding in or around the brain. Death results by the swelling of the brain against the skull. Drinking seawater temporarily increases blood's NaCl concentration, which signals the kidney to excrete sodium. However, seawater's sodium concentration is above the kidney's maximum concentrating ability. Eventually the blood's sodium concentration rises to toxic levels, removing water from cells and interfering with nerve conduction, ultimately producing a fatal seizure and cardiac arrhythmia [21].

Aurummetallicum: Chemical formula: Au IUPAC name: gold Toxicological symptoms: Pure metallic (elemental) gold is non-toxic and non-irritating when ingested [21] and is sometimes used as a food decoration in the form of gold leaf. • Mucocutaneous effects- most common • Dermatitis, pruritus, urticaria, stomatitis • Less common: alopecia, trophic nails • pseudocyanosis (non-blanching blue-grey skin discoloration; spares mucous membranes, may be more pronounced where sun-exposed) • Metallic taste • Diarrhea, enterocolitis (mild symptoms common, sometimes severe) • Proteinuria/membranous glomerulonephritis (common), nephrotic syndrome (rare) • Post-injection vasomotor reaction +/- anaphylaxis, syncope (rare) • Eosinophilia (common) • Cytopenias, aplastic anemia (rare) • Hepatotoxicity, pancreatitis (rare) • Encephalopathy, peripheral/cranial neuropathies (rare) • Interstitial pneumonitis (rare) [21].

Repertorial analysis

- MIND, forgetful- CAN.IND., APIS., PULS., NUX.V., NAT.MUR [86]
- MIND, anger- ANAC., ARS., BRY., IGN., NUX.V [86]
- MIND, anxiety- ACON., ARS., BELL., BRY., PULS [86]
- MIND, confusion- BELL., BRY., CAN.I., NUX.V., STRYCH., NAT.M., SEP, OP [86]
- MIND, delirium-AGAR., ARS., BELL., CAN.IND., OP., HYOS., STRAM [86]
- MIND, delusion-BELL., CAN. IND., HYOS, IGN., STRAM. [86].
- MIND, despair- ARS., COFF., HELL., IGN. [86]
- MIND, dullness- GELS., BRY., BELL., OP., SEP., NAT. M. [86].
- MIND, fright-ACON., OP., IGN., PULS., NAT.M [86]
- MIND, fastidious-ARS., NUX.V [86] ss
- MIND, homesickness-CAPS, CARB.AN., PHOS, AC [86]
- MIND, indifference- IGN., CHINA., HELL., OP., PULS., SEP [86].
- MIND, irritability- ACON., APIS., BRY., CHAM., NUX., NAT-M., SEP., SRTYCH [86].
- MIND, memory weak- CON., ARS., HELL., HYOS., SEP., VERAT [86].
- MIND, religious-HYOS., LACH., SUIPH [86].
- MIND, sadness-ARS., CHIN., IGN., NAT.M., SEP., VERAT [86].
- MIND, senses acute-COFFEA., BELL., ARS., OP., NUX-V [86].
- MIND, suicide-AUR.M., CHIN., NUX.V., NAT.S [86].
- MIND, mania-BELL., HYOS.,STRAM.,VERAT.[86]
- MIND, weary-ARS., CHIN [86].
- NOSE, smell, diminished-ANAC., BELL., HYOS., SEP., SIL., NAT.M [86].
- MOUTH, taste, insipid-ANAC., MERC., PULS., NAT.M [86].
- STOMACH, appetite, capricious- BRY., CHINA [86].
- STOMACH, appetite, diminished- ALU., PIC.AC [86].
- STOMACH, appetite, increased- ARS., CAN.I., CHIN., PULS., VERT., NUX.V [86].
- ANTICIPATIONS agg- ARS, GELS, MED, NAT-M, NUX-V [87].
- FASTIDIOUS- ARS, GRAPH, NUX-V [87].
- GRIEF, sorrow- IGN, PULS, NAT-M, GELS [87].
- SUICIDAL DISPOSITION, weary of life- ARS, AURM, NAT-M, CHIN, NUX-V, PULS, BELL, CAPS [87].
- FEAR, anxiety, fright- OPIUM, ARS, BELL, ACO, IGN, PULS [87].
- INSAMITY, MANIA, craziness- BELL, VERT-A, OPIUM, STRAM, ARS, NUX-V, HYOS [87].
- SLEEPLESSNESS, insomnia- ARS, BELL, COFFEA, HYOS, NUX-V, OPIUM, PULS, SEP [87].
- SENSES, SPECIAL, blunt, dulled- ANAC, HYOS, NAT-M, PULS [87].
- TASTE, lost, wanting- ANAC, BELL, HYOS, MAG-M, NAT-M, PULS [87].

Discussion

All the medicines the 12c dilution does not contain only molecules of its alkaloid, rather the 12c dilution contain more empty shells that represent the 3Dstructure of alkaloids, and that shells are found by arrangement of alcoholic molecules. This e mpty shells reach the receptor which was being agonisted by pathological molecules , get freed as the pathological molecules freely attached due to conformational isomerism to the empty shells, thus the receptor activated by this.

Conclusion

Scientist have come up with a vaccination against the SARS Cov-2 to save millions of people, but the mental health issues are also to be taken care of.to handle the neuropsychiatric complication a number of homoeopathic medicines along with their mode of action, sphere of action and also reportorial approach has been dicussed. This discussion can prove beneficial homoeopathic physicians in treating people suffering from neuropsychiatric complication of COVID-19.

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