EFFECTIVE UTILIZATION OF IMMUNOTHERAPY IN TREATMENT OF CORONAVIRUS

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Abstract:-
The novel coronavirus (2019-nCov) is an emerging pathogen that was first described in late Decei2019 and causes a severe respiratory infection in humans.

Since the outbreak of COVID-19, international attention has raised to develop treatment and control options such as types of Immunotherapies. Coronavirus causes respiratory infections including pneumonia, cold, sneezing, and cough. While in animals, it causes diarrhea and upper respiratory diseases.

History and Origin :-
First case of coronavirus was notified as cold in 1960. According to the Canadian study 2001, approximately 500 patients were identified as flu-like system. 17-18 case of them were confirmed as infected with coronavirus strain by polymerase chain reaction.

Corona was treated as simple non-fatal virus till 2002. In 2003, various reports published with the proofs of spreading the corona to many countries such as United States of America, Hong Kong, Singapore, Thailand, Vietnam and in Taiwan.

COVID-19 was first identified and isolated from pneumonia patient belong to Wuhan, China.

Introduction:-
Coronavirus are a group of related viruses that causes disease in mammals and birds. In humans, coronavirus causes respiratory tract infections that can range from mild to lethal. Until recently, most people will never have heard of coronavirus but, the disease causes in humans: animals have been...
recognized for over 50 years.

Coronavirus were first identified by a group of virologists (J D Almeida, D M Berry, C H Cunningham, D Hamre, M S Hofstad, L Mallucci, K McIntosh and DAJ Tyrrell), who relayed their finding in 1968 to the journal *Nature*, which publication a brief annotation.

Four Human coronavirus produces symptoms that are generally mild:

- Human coronavirus OC43 (Cov-OC43), beta-Cov
- Human coronavirus (Cov-HKU), beta-Cov
- Human coronavirus 229 (Cov-229), alpha-Cov
- Human coronavirus (Cov-N), alpha-Cov

Immunotherapy:

Immunotherapy or biological therapy is the treatment of disease by activating or suppressing the immune system. Immunotherapies designed to elicit or amplify an immune response are classified as activative.

Immunomodulators:

Immunomodulators are the active agent of Immunotherapy. They are diverse arrays of recombinant, synthetic and native preparation.

Immune enhancement therapy:

Autologous Immune enhancement therapy uses a person's own peripheral blood-derived natural killer cells, cytotoxic T lymphocyte epithelial cells and other relevant immune cells are expanded in vitro and then rein fused.

Suppression Immunotherapies:

- Immune suppression dampens abnormal immune response in autoimmune disease or reduces a normal immune response to prevent rejection of transplanted organs or cells.

  - Immunosuppressive drugs:
  - Immune tolerance:
Innate Immune response:
The innate immune response is one of the two main immunity strategies found in vertebrates (the other being the adaptive immune system). The innate immune system is an older evolutionary defence strategy. Relatively speaking, it’s the dominant immune system response found in plants, fungi, insects, and primitive multicellular organisms.

- Pathogen recognition receptor: The host innate immune system detects viral infections by using pattern recognition receptors (PRRs) to recognize pathogen-associated patterns (PAMPs). At present, the known PRRs mainly include toll-like receptor (TLR), RIG-like, receptor (RLR), Nod-like receptor (NLR), C-type lectin-like receptor (CLL), and free-molecule receptor in the cytoplasm, such as cGAS, IFN-α/β, DAI, and so on.

Adaptive immune response: The adaptive immune system is referred as the acquired immune system, is a subsystem of the immune system that is composed of specialized pathogen by preventing that eliminate pathogen by prever their growth. The acquired immune system is one of the main immunity strategies found in vertebrates (the other is the innate immune system).

Mode of spreading: People can get the infection through contact with a person who has symptoms from the virus including cough and sneezing. Generally coronavirus was spread via airborne zoonotic droplets. Virus was replicated in ciliated epithelium that caused cellular damage and inflam infected site.

Vaccine: A vaccine is a biological preparation that provides active immunity to a particular infection disease. A vaccine typically contains an agent that resembles a disease-causes microorganisms and is often made from weakened or killed forms of the microbe, it's toxic, or one of it's surface protein.

Type of vaccines:
- Live-attenuation vaccine
- Inactivated vaccine
- Subunit, recommended, polysaccharide and conjugated vaccine
- Toxoid vaccine

Supplements:

Important Note: No supplements will cure or prevent disease.

With the 2019 coronavirus COVID-19 pandemic, it's especially important to understand that no supplement diet or other lifestyle modification other than physical distancing and proper hygiene practices can protect you. COVID-19. Your immune system consist of a complex collection of cells, process and chemicals that constantly defend your body against invading pathogen, including virotoxins and...
Here are 12 supplements that are known for their immune-boosting potential.

- Vitamin D
- Zinc
- Medicinal Mushrooms
- Astragalus
- Selenium
- Garlic
- Andrographis
- Licorice
- B complex vitamins
- Curcumin
- Echinacea
- Propolis

Coronavirus, **Precautions** and **strengthening** the immune system:

Prior to this recent outbreak of the Wuhan Coronavirus. It is likely that most people had never heard of this strain of virus even though other forms have caused significant outbreak in the past.

Coronavirus are a group of viruses that causes disease in human and other mammals, birds, bats and reptiles. When human are infected most forms of the virus causes mild respiratory infections but as we have seen with the infection coronavirus in rare cases a coronavirus infections can be lethal.

As of now, no vaccine has been found for mutated for the novel coronavirus. In light of this fact, prevention appears to be the best cure available so far with coronavirus threatening to run riot in India here how you can keep yourself safe from the scourge.

Here are the measure you need to take to keep the virus at bay:

- Avoid close contact with a person who are sick. Maintain least yourself feet distance who is coughing or sneezing.
- Avoid touching your eyes, nose and mouth. Stay home when you are sick.
- Cover your cough or sneeze with a tissue other dispose it tissue safely.
- Clean and disinfect frequently touched object and surface using a regular household cleaning spray or wipe.
- Wearing a mask it’s not necessary unless you are taking it of an infected person. The centre for disease control (CD) does recommended that only infected person wear mask prevent the spread of the virus.

**Conclusion:**

As is evidence from this systematic review, Immunotherapies an ePicient therapeutic option intervention against COVID-19 and the main method in this regard such as using immunoglobulin and plasma therapy have improve clinical outcome in COVID-19 infected patients.