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Extended Abstract
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Bacteriology 2019: Deadly rabies diagnosis post one year of viral transmission from dog's bite, Rafa Aidya Saraswati, Padjadjaran University

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Introduction

Rabies is a zoonotic viral infection disease targeting CNS. This disease is mortal, 99% of the patients diagnosed end up die, transmitted from rabid animal hosts, mostly dogs. Globally, it has its own endemic areas, including Indonesia, of 34 provinces, 24 had reported rabies case. Until now, there is no cure for the disease, it can only be prevented by vaccine injection. Theoritically, the incubation period range from 20-90 days. In this case, it was 1 year, proven virus can be differ in behavior (reproduction and travel time).

Rabies

Rabies is a vaccine-preventable, zoonotic, viral disease. Once clinical symptoms arrive, rabies is virtually 100% fatal. In up to 99% of cases, domestic dogs are culpable for rabies virus sending to humans. earlier, rabies can affect both domestic and wild animals. It is spread to people and animals over the bites or scratches, normally via saliva. Rabies is present on all continents, except Antarctica, with over 95% of human deaths appear in the Asia and Africa regions. Rabies is one of the ignored Tropical Diseases (NTD) that predominantly affects poor and vulnerable populations who live in remote rural ares. roughly 80% of human cases occur in rural areas. even if effective human vaccines and immunoglobulins exist for rabies, they are not readily possible or accessible to those in need. All over, rabies deaths are rarely reported and children between the ages of 5–14 years are frequent victims.

Prevention

Eliminating rabies in dogs:

Rabies is a vaccine-avoidable disease. Vaccinating dogs is the most cost-effective action for preventing rabies in people. Dog vaccination decrease deaths attributable to dog-mediated rabies and the need for PEP as a part of dog bite patient care.

Awareness on rabies and preventing dog bites:

Education on dog behavior and bite prevention for both children and adults is an fundamental extension of a rabies vaccination programmed and can reduce both the incidence of human rabies and the financial burden of treating dog bites. Increasing awareness of rabies prevention and control in communities includes education and information on answerable pet ownership, how to prevent dog bites, and urgent care measures after a bite. Engagement and ownership of the programmed at the community level increases reach and cheek of key messages.

Immunization of people:

The common vaccine is used to immunize people after an exposure (see PEP) or before exposure to rabies (less common). Pre-exposure immunization is suggested for people in certain high-risk occupations such as laboratory workers handling live rabies and rabies-related (lyssavirus) viruses; and people (such as animal disease control staff and wildlife rangers) whose professional or personal action might bring them into direct contact with bats, carnivores, or other mammals that may be infected. Pre-exposure immunization might be determined also for outdoor travellers to and expatriates living in remote areas with a high rabies exposure risk and defined local access to rabies biologics. Finally, immunization should also be treated for children living in, or visiting such areas. As they play with animals, they may receive more severe bites, or may not report bites.

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Symptoms

The incubation period for rabies is typically 2–3 months but may vary from 1 week to 1 year, dependent upon factors such as the area of virus entry and viral load. Initial symptoms of rabies include a fever with pain and unusual or new tingling, pricking, or burning sensation (paraesthesia) at the wound site. As the virus spreads to the central nervous system, dynamic and fatal inflammation of the brain and spinal cord develops.

There are two forms of the disease:

Furious rabies outcome in signs of hyperactivity, excitable behaviour, hydrophobia (fear of water) and sometimes aerophobia (fear of drafts or of fresh air). Death occurs after a few days owed to cardio-respiratory arrest.

Paralytic rabies accounts for about 20% of the total number of human cases. This form of rabies runs a less dramatic and generally longer course than the furious form. Muscles constantly become paralyzed, starting at the site of the bite or scratch. A coma slowly increases, and eventually death occurs. The paralytic form of rabies is often misdiagnosed, contributing to the under-reporting of the disease.

Case Descriptions

On September 2017, 51 years old woman was referred from primary healthcare as brought by her husband complaining of change in his wife's behavior. She was tend to be agitated and uncooperative. In the ambulance, she was fidgety when the wind touched her skin. Turning out she had history of unknown dog's bite one year prior and didn't seek for any vaccine injection.

From anamnesis and physical examination: she was alert although seen restless. Every words she said were still in the right sense and in accordance with the questions. Her vital sign was stable with positive results on aerophobic and hydrophobic test. Other physical and neurological examination showed no abnormalities. Twelve hours after, the patient didn't survive.

Discussion

Several differential diagnoses can be considered with chief complaint of agitation: metabolic, neurological, psychological, and infectious disease. Patient history of rabid dog's bite without vaccine injection still made uncertain rabies diagnosis because of a long-time incubation period. For every examination and supportive test possible showed no tendency on other DD, specific aerophobic and hydrophobic test were performed with positive results. This case had proven one-year-post-viral transmission can be resulted to rabies.

Conclusion

Needs further investigation. How can the virus be varied in incubation period and if there is any specific factors underlie the condition.

symptoms are dependent upon massive release of neurotransmitters like norepinephrine, dopamine, and glutamate. They possibly include neurotensin and neuro kinins too. The activity of most of above neurotransmitters is largely dependent upon release from the presynaptic terminals of neurons and ultimately intracellular calcium ion concentration built up through voltage-gated slow calcium channels. Hence, calcium blockers in all probability must have a vital role to inhibit the release of the above neurotransmitters in the brain to control the symptoms. Current therapy for the above disorders is by the use of antidepressants of different types most common of which include Tricyclic Antidepressants (TCADs), Selective Serotonin Reuptake Inhibitors (SSRI) and sedatives as add-on therapy. TCADs like imipramine are associated with anticholinergic side effects and drug dependence while SSRI ones are having side effects of initial anxiety, the long onset of action, nausea, dysorganesmia and the rarely serotonin syndrome. Hence, due to the side effect profile of current drugs search for a better drug will be worth trying which is relatively safe and free from major side effects.

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