

History of Rabies in Traditional Medicine's Resources and Iranian Research studies: On the Occasion of the World Rabies Day (September 28, 2012)

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INTRODUCTION

The word *rabies* originates from the Latin word *rabere*. *Rabere* means to rage or rave, and may have roots in a Sanskrit word *rabhas*, which means to do violence. The Greeks called rabies *lyssa* or *lytta*, which means frenzy or madness.^[1] It means madness in Iranian traditional medicine also. This fatal illness is a zoonotic viral disease that infects domestic and wild animals, and is spread to people through close contact with infected saliva *via* bites or scratches. It is present on all continents with the exception of Antarctica, but more than 95% of human deaths occur in Asia and Africa.^[2] About 55,000 people die every year from rabies, an average of one death every 10 min. The "World Rabies Day" highlights the impact of humans and animal rabies and promotes how to prevent and stop the disease by combating it in animals.^[3] We are also honored on this occasion, and will emphasize to the role of Iran in the advancement of knowledge and skills to combat rabies.

RABIES IN TRADITIONAL MEDICINE'S RESOURCES

Rabies has a special place in Iranian and Islamic Traditional Resources and in the history of medical research in Iran.^[4] On the rabies and a rabid dog, Iranian physicians have said and written much and they have introduced their innovations now and then.^[5] For example, Rhazes, Ahvazi, Avicenna,

Jorjani, and others had specific opinions on the cause and effect relationship in rabies and other known infectious diseases and their prevention.^[6] This paper will try to investigate the old and new efforts on this issue in Iran on the occasion of the World Rabies Day.

However, dogs could be a source of considerable harm to human beings. Rabies must have been one of the earliest diseases, which forced itself upon the attention of mankind. Iranian Prophet Zoroaster (6000 BC) fully realized the danger of infection.^[7] On the basis of the facts which are mentioned in holy Avesta, the mentioned prophet has asked the God, "If there be a mad dog in the house of a worshipper of God or one that bites without barking, what shall the worshippers of Mazda (God) do? God answered: They shall put a wooden collar around his neck and they shall tie him to a post. If they shall not do so and the mad dog smite a sheep or wound a man, the dog shall pay for it as for willful murder".^[8] Rhazes (865–925), a Persian physician, described many of the symptoms of animal rabies and wrote many of the signs and symptoms of human rabies, in the first encyclopedia of Iranian and Islamic Traditional Medicine, which is named as "Alhavi in Medicine". Moreover, he explained his clinical experiences to the medical resources of his time.^[9] In a period of time, less than a century, Ahvazi or Haly Abbas (930–994 AD) mentioned briefly about Rhazes' ideas in the second encyclopedia of

traditional medicine, which is named as “Kamel-al-Sanaeh,” and emphasized on considering history about animal bites.^[10] In a half a century after Ahvazi and more than a century after Rhazes time, Avicenna (980–1037) described the symptoms of rabies in the third encyclopedia of traditional medicine, which is named as “Avicenna’s Canon of Medicine” and emphasized on the following points:

- Rabies, caused by a toxic substance, which is in the saliva of a rabid animal.
- If the bite site is bleeding, it will be associated with better prognosis.
- The suturing of bite site must be avoided by physicians.
- If the bite wound was sutured by other physicians, the sutures must become opened and try to prevent it from healing.
- Rabies is an incurable disease unless the patient admitted before the onset of hydrophobia.
- The rabies not only occurs in dogs, but also can occur in other animals and may transmit through human bite to other persons.^[11] His writings mark a step forward in knowledge about the disease, and his books were used in European medical schools for nearly 500 years.^[1] Jorjani (1040–1136) revised the same materials available in three previous encyclopedias in the fourth encyclopedia of traditional medicine, which is named as “Zakhireye Khwarazmshahi”. In that work, he emphasized on transmission of fox rabies to humans.^[12]

Overall, during the three centuries when these four encyclopedias of traditional medicine were written, the advancement in the medical field was very slow, so that no significant difference was found in the opinions and votes of the four scientists. What attract attention in all of the traditional medicine’s resources is the fact that the rabies has been attributed in none of them to superstitions; such as reincarnation of devil and jinn to human brain. Moreover, there was always an external cause for its occurrence. However, considering that still man’s knowledge was not enough and experiences of microbiology and virology were not achieved, but he knew some of the toxins, and rabies was attributed to a toxin in the saliva of rabid animals which transmits to other animals and humans.

RESEARCH STUDIES AND INNOVATIONS

In addition to ancient knowledge and attitude about rabies exists in Iranian traditional medicine resources, Iran has had a huge role in the new scientific advances associated with rabies. Here we describe some of them:

In 1954, Professor Baltazard, the director of Pasteur Institute of Iran, Tehran, and his assistant, Dr Ghodssi concluded that “Anti-rabies treatment in its present form is perfectly valid in principle but is not sufficiently effective. The problem of this treatment cannot continue indefinitely to be viewed in the rosy light of unduly favorable statistics, particularly those of countries where rabies no longer exists. Future developments should favor research aiming at the production of more-active antigens in small volume, of powerful antibodies, or, better still, of avirulent living viruses which would restore to Pasteur’s discovery its original significance.”^[13] As mentioned above, rabies has a special place in the history of medical research in Iran and many research studies of international importance on rabies were carried out in Iran, including the first successful field trial on the use of serum for postexposure prophylaxis.^[4] In 1976, in Pasteur Institute of Iran, Professor Bahmanyar and his colleagues successfully proved the postexposure efficacy of another rabies vaccine that is named as “Sanofi Pasteur SA Imovax Rabies Vaccine” during clinical experience in conjunction with antirabies serum.^[14] Forty-five persons severely bitten by rabid dogs and wolves in Iran were treated after exposure with a new rabies vaccine produced in cultures of human diploid cells. All except one also received one injection of rabies immune serum. This treatment, in contrast to past experience with other vaccines, resulted in protection of all individuals against rabies. Thus, almost a century after the postexposure treatment of humans was initiated and an effective tool for protecting human beings against rabies has finally been developed.^[15]

CONCLUSION

Our physicians and scientists have discussed a lot about rabies and they have introduced their innovations now and then. Therefore, we should be grateful for their activities and more active than they do.

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