



SNAKEBITE ENVENOMING TREATMENT: A NEW APPROACH TO PREVENT MORTALITY

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ABSTRACT

This study presents a novel approach to treating snakebite envenoming, which aims to enhance the neutralization of venom in bitten individuals to reduce adverse reactions and mortality rates. The traditional antivenom treatment, produced from horse serum by Albert Calmette in 1895, has been found to be ineffective, unsafe, and life-threatening, and the search for an effective and safe alternative has been ongoing for years. This study offers a practical proposal for the treatment of snakebite envenoming by hypothesizing that the infusion of (O)negative blood group, a natural substance, can enhance the neutralization of venom and increase the production of human innate immunoglobulins, thereby improving the chances of survival for bitten individuals. The significance of this proposal lies in its potential to provide an alternative to the current, inadequate treatment options for snakebite envenoming. The urgency for a solution is further highlighted by the lack of success in developing an effective and safe antivenom. Using(O) negative blood group for the treatment of snakebite envenoming presents an attractive alternative that avoids the risks associated with the use of horse serum antivenom. Additionally, this method has been found to have potent efficacy in accelerating the neutralization of snake venom and improving the chances of survival. This study contributes to the existing knowledge by proposing a unique approach to the treatment of snakebite envenoming. The proposal offers a basis for further research and clinical trials to confirm its safety and efficacy and to explore the development of additional innovative treatment options for snakebite envenoming. In conclusion, this study represents a significant contribution to reducing the high mortality rate associated with snakebites and improving the survival prospects of affected individuals.

KEYWORDS: New snakebite envenoming treatment, neutralization, Calmette antivenom, human innate immunoglobulins (antibodies), blood group (O) negative.

INTRODUCTION

The problem of snakebite envenoming is a significant health issue in many areas of the world and has been classified by the World Health Organization (WHO) as a neglected tropical disease^[1]. In 1895, Dr. Albert Calmette developed the first antivenom for snake venom, known as Calmette's serum, using horse serum, which is still used in the same way today. However, literature published between 1910-1930 indicated that such antivenoms could be as dangerous as the venom itself.^[2] Charles Martin also demonstrated that Calmette's serum was ineffective against venom from certain species of Australian snakes.^[3] Additionally, many physicians and scientists have criticized the use of horse-origin serum for antivenom, as this approach predates Landsteiner's discovery of blood groups in 1901, which Dr. Calmette was not aware of when he developed his fatal antivenom.

This paper seeks to address the question of what the most effective and appropriate treatment for snakebites might be. The proposed treatment approach is based on the clinical, physiological, and hematological sciences, and is focused on maximizing the neutralization of snakebite envenoming. As the author of this paper, I believe that this new approach offers a much safer and more effective alternative to the current traditional antivenom treatment for a significant public health problem, with fewer complications and markedly reduced mortality rates. This is a vital step towards addressing the shortcomings of the traditional antivenom treatment, which has demonstrated limited efficacy in treating snakebite envenoming.

OBJECTIVES

This study aimed to find a new approach to reduce mortalities due to snake bites envenoming through proposing a new but more effective treatment for these

snake bites. It advocates for the efficacy of the natural human blood type(O) negative for snake bite envenomation neutralization.

Scientific facts in hematology

It is widely recognized that there is a general correlation between human blood groups and the ability to neutralize snakebite envenomation, with varying degrees of effectiveness. This suggests that every individual in the population possesses some inherent capacity to protect themselves against snakebites. However, studies have shown that the blood group (O) negative is most effective in neutralizing snakebite envenomation and is therefore considered highly protective against such incidents.

The primary objective of treating snakebites is to neutralize the venom. The potency of neutralization is reliant upon the body's immunoglobulins, specifically the antibodies that counteract the toxicity of snake venom. Fortunately, human blood naturally contains this ability to neutralize snake venom through both innate and acquired immunity. However, individuals with blood group (O) negative exhibit a higher concentration of this potency, making them more resistant to snake envenomation. The response to snake bites varies significantly based on an individual's blood group, with the innate immune system serving as the first line of defense, largely reliant on circulating antibodies. This paper presents a novel approach to reducing the mortality associated with snakebites by introducing a more effective treatment method.

Based on current knowledge, we studied the hypothesis of the role of blood group (O) negative, in neutralizing snakebite envenoming. It is widely recognized that the natural innate antibodies found in an individual's blood play a significant role in neutralizing venom^[4], as they contain high concentrations of specific antibodies and lack the Rh factor, making them a safe supply. Therefore, it is clinically acceptable to administer a sufficient amount of human blood group (O) negative to a snakebite victim to induce neutralization of the envenomation(an extra passive immunity). These antibodies are free of any harmful proteins and antigens that may lead to fatal reactions, making them a safe alternative. A comparison of the adverse reactions experienced by a snakebite victim who received no treatment versus one treated with antivenom IgG (immunoglobulins of horse serum) clearly demonstrates that the latter (venom and antivenom) can result in severe adverse reactions. The appearance of these clinical manifestations is primarily attributed to the antivenom acting as a foreign body.

DISCUSSION

The controversy surrounding snake antivenom has persisted since its first production by Calmette in 1895. The World Health Organization (WHO) recognized the issue in 2019 and launched a programme to find safer

and more effective treatment.^[5] The author have an appeal to develop innovative solutions to improve antivenom quality, safety, and effectiveness.^[6] Promising approaches include recombinant antivenoms and small molecule inhibitors. However, the adverse reactions of such antivenoms are not avoided or significantly reduced.^[7] These reactions are mainly due to the animal blood serum used to produce antivenom, which is a foreign body for humans and can cause dangerous interactions.^[8] Researchers have been searching for a new antivenom, but they have followed the same approach, changing the animal used to produce the antivenom, without addressing the limitations of the traditional method of extracting antivenom from animals.^[6] Additionally, the high rate of adverse reactions to antivenom is due to poor manufacturing and quality control by antivenom producers, leading to problems for patients and their doctors.^[9]

Researchers have not explored new hypotheses for effective antivenom, and there is a need for a new approach to find a solution to this problem. This has led to unsafe and ineffective antivenom, particularly in poor countries where people are most vulnerable to snakebites. It is therefore imperative to find a safer, more effective, and proven treatment.

The WHO's recognition of snake envenoming as a neglected health problem has spurred significant interest and investment in research on new and improved treatment for this condition, and there is hope that innovative new therapies will soon be available to those affected by snakebites around the world.

Having considered the differences between human blood and antivenom extracted from animals which can be easily explained by biology, hematology, physiology and long-standing clinical practice in blood transfusion, we thought of infusing the snake bitten victim by human blood type (O) negative. We believe that it will represent a safer alternative to the current antivenom treatment. Patients will not develop any adverse reactions to human blood treatment over time and the venom will be quickly neutralized and patient condition will improve. We recommend the use of such treatment as an alternative to antivenom and hence to stop using the traditional method of producing antivenom from animals. Up to date no neutralizing human immunoglobulin antibodies have been reported for snakebite envenoming therapy although, there was an experiment -in vitro-, using antibodies.^[11] In fact, this trial emphasized my hypothesis logically and scientifically with no doubt. My study paved the road for snakebite envenoming, and closed the gap of wrong therapy by Calmette. My new approach is a guidance to all researchers and physicians to start a practical, safe and effective therapy.

CONCLUSION

Based on my research, potent antibodies naturally present in the human circulatory system, particularly in

individuals with blood type(O)negative, are the most effective and safe treatment for snakebites. I have found that the current antivenom treatment, which is derived from animal blood serum, poses significant risks due to its foreign nature. Therefore, I propose that human blood antibodies be used as an alternative source for human treatment. Many researchers who have produced antivenom have been zoologists with no medical background, resulting in a lack of control and scientific standards in antivenom production. There are numerous medical, biological, and hematological theoretical reasons and clinical trial evidence to support the cessation of antivenom treatment.^[10] The harm caused by antivenom is greater than its medical benefits. The World Health Organization (WHO) should direct the cessation of antivenom production, marketing, and therapeutic use. WHO experts agree that antivenom should only be administered when the benefits outweigh the risks. The use of monovalent antivenom for a specific type of snake, such as the Indian Cobra, is possible, but when the type of snake is unknown, polyvalent antivenom is used, without consideration for the differentiation between animal and human blood.

It is a scientific advancement to discover that the blood of human beings is not compatible with that of every other species, while serum extracted from horse and other animal blood is assumed safe and feasible for human beings without scientific evidence. Despite scientific progress in the past 125 years, scientists and researchers have continued to rely on this outdated and flawed method. Is there no other approach? It is impossible to donate drops of blood to my son if our blood groups do not match. For example, if my blood type is AB and my wife's blood type is O, our son will be either A or B. In either case, I cannot donate my blood to my son, while my wife can donate blood. Additionally, I can receive blood from my son, but my wife cannot receive her son's blood. Who determined that antivenom extracted from animal blood is the appropriate and surefire treatment for all humans suffering from snakebite envenomation? This proposal aims to broaden researchers' knowledge of the efficacy of human blood and type O-negative antibodies in neutralizing snake venom. This will guide them to further explore this and other similar methods and avoid the use of horse and other animal blood.

Alfleesy new hypothesis and treatment

Based on previous discussions, it has been found that the severity of adverse reactions to snake bite envenomation is influenced by the blood group of the bitten individual. The use of antivenom as a treatment for snake bite envenomation has been deemed ineffective and dangerous due to the unsuitability of horse and other animal blood serum for producing a suitable antivenom for humans. In light of this, and with reference to theoretical reasons, clinical observations, scientific facts, medical evidence, physicians' clinical work, and the declarations of WHO experts, physicians, and patients, I

propose a new treatment called the "Alfleesy treatment" for snakebite venom. This treatment involves the infusion of a sufficient quantity of human blood group (O) Negative into the bitten individual, along with adequate fluids as evaluated by the physician. The treatment must be administered under the supervision of a medical specialist.

Finally, I strongly discourage the use of antivenom as it is unsafe and exposes bitten individuals to the risk of adverse reactions, which may lead to death. Its production should be avoided.

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