Opinion

A complementary approach in the treatment of overwhelming infections caused by antibiotic resistant bacteria: capturing and removing the toxins

Volume 5 Issue 2 - 2017

Franklin David Nash
Center for Scientific Analysis of Policy, LLC, USA

Correspondence: Franklin David Nash, Principal, Center for Scientific Analysis of Policy, LLC, Aethlon Medical Inc., 9635 Granite Ridge Drive, Suite 100, San Diego, CA 92123, USA, Tel 844.870.7870, Email docnash@scipolicy.org

Received: October 24, 2016 | **Published:** January 25, 2017

Opinion

Rare is the person reading this brief and focused note who has no knowledge of the MRSA (methicillin resistant *Staphylococcus aureus*) and other diseases caused by bacteria and other organisms that are not susceptible to antibiotics and are potentially lethal pathogens. Recently an antibiotic resistant strain of*E. coli* has been found in a female patient in Pennsylvania prompting some to ask if we are entering a pre-antibiotic era.[1] For the sake of review and updating, I include a reference to a recent article that discusses current concepts regarding the mechanisms by which the MRSA causes local tissue damage, septicemia, and organ failure that can lead to death despite heroic nursing and medical attention at considerable costs.[2]

We understand now that the MRSA bacterium does not directly cause the processes which are damaging. In itself, that organism is relatively inert, but, it secretes toxins that permeate the body. The concept of such an actor is not recent, but identification of the specific toxins is. Ideally, there will be antitoxins to treat MRSA, but we are not at that point today, so the employment of any method of treatment, regardless of its complexity or cost, that increases the possibility of survival must be considered.

In view of a recently reported increase in MRSA infections in the USA, the difficulty in effectively treating of them, and the high frequency of attendant death, I'm writing to discuss a new complementary approach to dealing with those organisms in overwhelming infections. It is a device that is not curative, but is complementary, augmenting the effects of established regimens.

Even if the MRSA organism itself does not cause damage, we still must inactivate it to end toxin production, but if the pharmacological tools are unable to do that in doses that are not so high as to be toxic in and of themselves and lethal for some people, what option do we have?

The device in question is called the Hemopurifier®, a product of Aethlon Medical, Inc. of San Diego, CA, that can and does remove viruses that cause diseases such as HIV, HCV, Ebola, dengue, and chikungunya and is cleared for use against the latter three in the USA. Recently, in studies conducted under a DARPA contract, it has trapped and removed the toxins associated with MRSA.

The Hemopurifier®, is not simple to engage; it uses the same system that is employed in hemodialyalitic therapy of patients with kidney failure, and the patient must be prepared for blood access and return as in conventional hemodialysis. But, when treating a patient facing imminent death due to organ failure from toxemia, there should be no limit to the life saving possibilities considered and employed.

The basic mechanism is dialysis with a membrane that passes the pathogen in question, here, toxin, and prevent it from reentering the blood side. The desired substance in the size range of viruses and toxins is removed from the circulating blood and expelled in the dialysis fluid. Obviously, bacteria being of a size similar to that of the blood cells cannot pass across the membrane and are not removed, but the toxins are. Also obvious is the need for some means of eliminating the MRSA organism, but removal of the toxins by Hemopurifier® dialysis treatment if applied to an end-stage patient approaching vital organ degradation is a step closer to survival.

Were we to have and employ vaccines to prevent the conditions which I have mentioned and more, the war would not be won since in all probability, we can look forward to the continuing arrival of new pathogens as well as old ones sporting new genetic alterations. So, vaccines while appropriate and necessary cannot be the end-alls to our contests unless they are very broad spectrum in development and effect rather than being aimed at a single specific organism, a treacherous path at best because of the probable necessity of manipulating immunological characteristics at the bench. When we consider developing antibiotics, the same caution rings true. But here I suspect that the quest for a wider coverage can be more readily carried out by the pharmaceutical chemist.

With so many questions to answer, old, new, and unforeseen, that depend upon adequate funding of and by The National Institute for Allergy and Infectious Diseases of the National Institutes of Health, for both in house research and that of extramural research facilities, increasing the Institute's budget is only the logical thing to do, so that when the next epidemic or pandemic outbreak occurs, we are better prepared to meet it rapidly and effectively. In considering the defense of our country, we must think well beyond military hardware and to possible biological terrorism and warfare.[3]

Acknowledgments

None.

Conflicts of interest

Author declares there are no conflicts of interest.

Funding

None.

References

1. http://www.modernhealthcare.com/article/20161019/NEWS/161019887?utm_source=modernhealthcare&utm_medium=email&utm_content=20161019-NEWS-161019887&utm_campaign=hits
2. https://microbepost.org/2012/09/12/virulence-mechanisms-of-mrsa/
3. Nash FD. Isn't it about Time?. *Int J Vaccines Vaccin*. 2006;2(5):a00045.

Citation: Nash FD. A complementary approach in the treatment of overwhelming infections caused by antibiotic resistant bacteria: capturing and removing the toxins. *Int J Complement Alt Med.* 2017;5(2):56–57. DOI: 10.15406/ijcam.2017.05.00150