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Letter to the Editor

What do we lean from the "PhagoBurn" project

Dear Professor Steven E. Wolf,

PhagoBurn was the first randomised controlled trial to investigate phage therapy which was initiate in 2010. This study aimed to evaluate the efficacy and tolerability of PP1131 (cocktail of 12 natural lytic phages) compared with 1% sulfadiazine silver emulsion cream in patients with infected burn wounds.

The results were published on Lancet Infect Dis with the title "Efficacy and tolerability of a cocktail of bacteriophages to treat burn wounds infected by *Pseudomonas aeruginosa* (PhagoBurn): a randomised, controlled, double-blind phase 1/2 trial [1]".

A total of 25 subjects (PP1131 n=12, standard of care n=13, TBSA from 12% to 39%) were involved in this study. The authors found that the primary endpoint was reached in 144 h in the phage therapy group versus 47 h in the standard of care group (hazard ratio 0.29, 95% CI 0.10–0.79; p=0.018). In the PP1131 group, three of 13 participants had adverse events versus seven of 13 in the standard of care group. PP1131 decreased bacterial burden in burn wounds at a slower pace at very low concentrations. And the reason might be the huge reduction of phage concentration, which resulted in 1000-fold–10 000-fold lower dose of active phages administration. Furthermore, six cases with multidrugresistant bacteria infections have been successfully treated with phage therapy.

Infections were the main death causes for burn patients. Due to the increasing of antibiotic-resistance, phage therapy provide an alternative treatment for the resistant pathogens. In fact, two other phage therapy clinical trails had reported previously [2,3]. However, there are some obstacles to overcome including the stability of phages, the narrow host-range of phages and the long term effect after systematic use.

Conflict of interest

The authors had now conflict of interest.

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