

Some Methods for Combating of Superbugs

Abstract

Superbugs is the term which used for describing of multidrug-resistant organisms. MRSA, VRE, ESBLs are some examples on superbugs. The combating of superbugs achieved by proper hand washing and using of good hand hygiene, DNA Sequencing of superbugs, Using of Nano-based therapy, also using of Nano-enabled antibiotics, prevent of antibiotic misuse and overuse, using of Essential oil, and finally using of Phage therapy.

Background

Superbugs is the term which used for describing of multidrug-resistant organisms that evolved and developed resistance to at least one type of antimicrobial drug or antibiotic. MRSA, VRE, ESBLs are some examples on superbugs.

Methods

Combating of superbugs achieved by:

- 1-Proper hand washing and using of good hand hygiene. Hand washing should be:** immediately before patient touching, performing an invasive procedure, or invasive device manipulate, immediately after touching a patient or contaminated items or surfaces and after removing gloves. After touching items or surfaces in the immediate patient care environment, even if the patient was not touched.
- 2-DNA Sequencing of superbugs** playing an important role in combating of spread such as DNA sequencing from patient and compared with database for determining source of infection
- 3-Nano-based therapy for combating of superbug** such as using of nano metals and metallic oxides which having high activity against board spectrum antibiotic resistant bacteria, such as AgNPs which having high activity against MRSA and silver resistant *E.coli*.

4- Nano-enabled antibiotics such as using drug delivery system and using of other methods such as cellulose nano crystals-porphyrin, CNTs and others.

5- Prevent of antibiotic misuse and overuse which due to developing of resistant for antibiotics via one or more mechanisms of DNA alteration.

6-Essential oil having a new weapon for combating of superbugs, oil is derived from variety of natural sources including plants, or component of plants such as flowers, leaves, and others, these oil having complex mixtures of chemicals which having antimicrobial activity.

7- Phage therapy is play an important role for fighting of drug-resistant pathogens. Generalized advantages of phage therapy has like 'Auto dosing'. Phages during the process for bacterial-killing are capable of increasing in number specifically where hosts are located. The phages are intelligent enough to put a desire dose to kill host bacteria.

Results

Many methods for Combating of Superbugs includes:

Proper hand washing and using of good hand hygiene, DNA Sequencing of superbugs, Nano-based therapy, Nano-enabled antibiotics, using of Essential oil, and using of Phage therapy.

Conclusions

Combating of Superbugs is very important idea

References

WHO Evidence of hand hygiene to reduce transmission and infections by multidrug resistant organisms in health-care settings.

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