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Breaking the Chain: Understanding the Causes and Consequences of Antimicrobial Resistance

What if antibiotics were no longer effective? It is a current problem that is becoming a global issue, and it is called antimicrobial resistance. Some actions that are taken lead to antimicrobial resistance, which has many negative impacts on different aspects of society. Misuse and overuse of antibiotics are the beginning of a long causal chain (Dadgostar, 2019).

First, the misuse and overuse of antibiotics can appear for many reasons. In hospitals, doctors often prescribe antibiotics to patients who do not need it because they do not want to disappoint them (Dadgostar, 2019). Also, in other countries, doctors prescribe more antibiotics than needed because the hospital receives more money that way (Dadgostar, 2019). Even if the healthcare system seems to be the problem, agriculture is even more problematic. According to Dadgostar (2019), " [..] just in the United States, approximately 80% of the antibiotics sold are applied to food that animals eat (para 7). This is a lot, and it can increase the risks for animals to get an antimicrobial-resistant infection. It can also increase the risks for humans to develop this type of infection. Because bacteria are able to adapt to their environment to survive, giving too many antibiotics like the three examples given makes it those microorganisms hard for the bacteria to survive. As a result, those microorganisms will develop resistance to antimicrobials to survive (Debarbieux and Dufour, 2017).

Now, since the food of livestock contains a lot of antibiotics, animals are at a higher risk of developing antimicrobial-resistant infection. After that, one of the animals could get infected and sold to a supermarket. Then, someone could buy it, eat it, and get infected too (The Public Health Agency of Canada, 2017). Once resistant bacteria are in the human population, the infection will spread easily since it can be transferred from one person to another the same way a normal infection would: by contact, by inhalation of infected particles, etc. Once someone is infected, the struggle begins: the life of the patient will be endangered. Since the antibiotics are no longer effective, the infection will be harder to cure. Because of that, the disease of the patient tends to be worse, and the risk of death increases considerably (Dadgostar, 2019).

As a result, treatments are longer because the antibiotics normally used to fight this infection are now useless. Consequently, patients infected by resistant bacteria will often need longer hospitalizations (Dadgostar, 2019). This will cost a lot of money to the healthcare system especially if patients need to be placed in intensive care units or in isolation rooms (Dadgostar, 2019). The longer the patient stays, the higher the risks of spreading the infection to other patients, because the pathogen is present longer in the hospital, and there are more healthcare workers that interact with the infected patient. For example, if the patient is there for only one hour, only one or two healthcare workers might see them; however, if the patient is there for one week, many healthcare workers will visit them, increasing the risks of nosocomial infections (infections contracted in hospitals). “Also, nosocomial outbreaks with resistant pathogens may result in the closure of a wing of a hospital and the cancellation of elective surgeries, costing the hospital money” (Friedman et al, 2015, as cited in Dadgostar, 2019).

In conclusion, antimicrobial resistance is caused by misuse of antibiotics that leads to many different negative consequences that are related. Even if the effects can be severe, such as death and financial problems, there is proposed a solution that could help combat antimicrobial resistance: phage therapy (Debarbieux and Dufour, 2017). It uses phages, viruses that naturally kill bacteria, to cure antimicrobial-resistant infections (Debarbieux and Dufour, 2017). This solution could even work with antibiotics to be even more effective against bacteria (Debarbieux and Dufour, 2017).

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References

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Hook

Context

Thesis statement

Also include a statement that clearly states your point of view about the video/text.

1. Misuse and overuse of antibiotics

2. Bacteria adapt and develop resistance

3.Transmission through the food chain

4. Human-to-human

5. Increased severity of illness in humans

6. Economic and healthcare system consequences

Rephrased thesis

Summary of main ideas

Proposed solution

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