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Mini Review

Overpopulation: A Potential for Dissemination of Diseases

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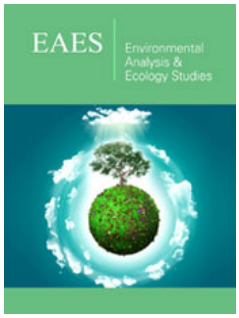

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Abstract

Overpopulation occurs when a given species exacerbates the number of individuals, so the ecosystem imbalance is evident, which can directly trigger the survival rate of other species. The human being is undoubtedly an overpopulated species capable of causing serious problems on the Planet. Based on this proposal, it aims to address the ecological theme, overpopulation, and how it can be an eminent potential in the spread of diseases.

Keywords: Ecology; Environmental imbalance; Epidemic; Pandemic; Population

Introduction

Ecology is not just a discipline, on the contrary, it requires interdisciplinary studies, which in turn can discuss related subjects and approaches [1]. As well as the ideological aspects that permeate within biology, evolution, genetics, and other main areas of biological study, it is necessary to understand that we are all one unit. Just as cells are made up of organelles that work for their proper and successful development, we are the basic units of Planet Earth [2], are we able to promote optimal functioning, or triggers for possible metastatic cancer.

Objective

Treating a possible cancer already spread over a body can be an arduous task and at the same time complicated, however not impossible. The human being is undoubtedly a carcinogen capable of causing serious problems in its host - Earth. The fact is, why does this happen? What would be the possible association of man with cancer? What do epidemics / pandemics and relatively common situations have to do with? The answer is simple and will be addressed - Overpopulation.

Contextualizing Overpopulation

There is still fear when talking about thermology, even due to its wide range of interpretations, but according to ecology, overpopulation occurs when a particular species exacerbates the number of individuals, so the ecosystem's imbalance is evident, which can trigger directly in the survival rate of other species [3].

The most important question we can work on here is to understand how overcrowding can trigger pandemics. Taking this context into account, we can devise practical, practical examples. To begin with, until 1850 there were about 1 billion humans on Earth and 150 years later the population reached the mark of 6 billion individuals. These events started with agriculture, a practice that started 10,000 years ago, was a significant milestone for ecological development in the history of the Earth, since there was no longer the need to be nomadic individuals and dedicated to planting, thus limiting the search for food, which consequently affected survival and reproduction rate. In the past 300 years, the human population has grown exponentially at an average of 100% per century. The most recent doubling from 3 billion to 6 billion over the past 40 years [4].

Environmental X Disease Interaction

Overpopulation intervenes as a direct result in the dynamics of the environment, each species can have considerable value as an indicator of environmental change with an extensive level, one of these aspects is directly related to the emergence of diseases and as we are talking about populations of the same species that have direct interaction, the genome.

The genome is simply a cluster of molecular and genetic information that combined express some kind of characteristic [5], thus, the species that share this information, also share the possibility of acquiring a disease or the resistance against it. In addition to this type of connectivity between a given species, there is also the possibility of other distinct individuals sharing the same characteristics, promoting a bridge between different populations [6]. See the example in Figure 1.

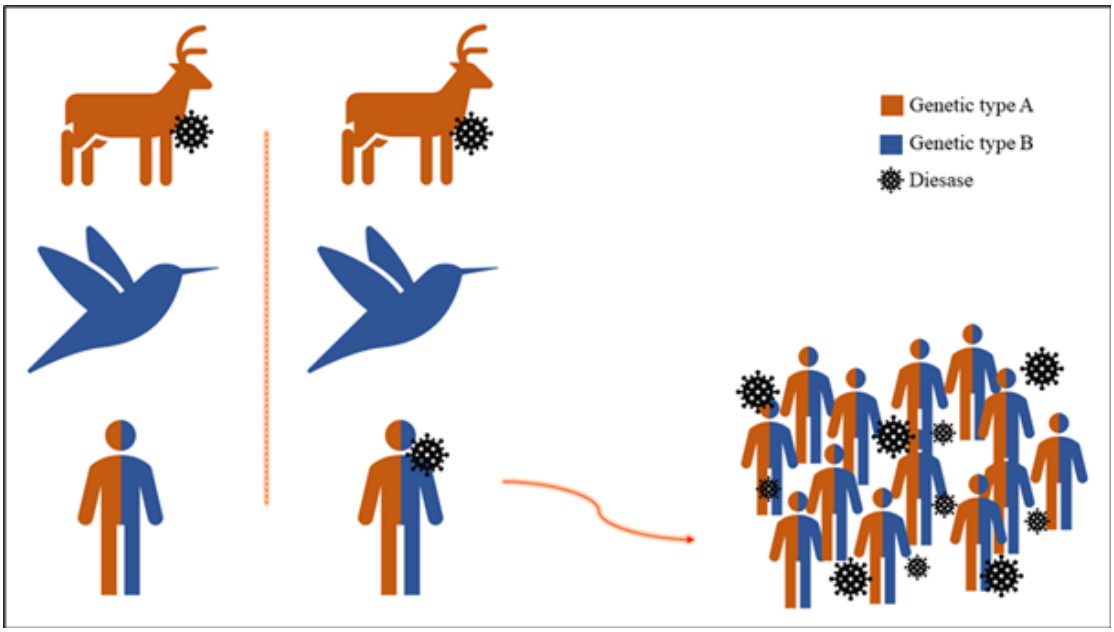

Figure 1: Contamination and spread of diseases based on genetic factors.

Diseases can be shared with a foundation in the genetic makeup of individuals, with compatibility the chance of contamination comes on a wide scale. In the image we can see three groups of different species in a representative way, the colors represent the genetic agreement between them. In the first part of the example (from left to right) we have individuals converging interactions with each other and with other species, but only one individual is infected with a specific disease, but after the interaction (in the second part of the figure) contamination occurs with another caste to be. Note that the disease spread only among individuals who shared genetic type A, and the type B carrier species, even having contact, did not acquire the characteristics of the disease.

In the last part of the figure, it is possible to observe the contamination strategy between individuals of the same species. The approach that I want to show here, portrays an example of cross-contamination, where the microorganism with pathogenicity factor has the adaptive capacity in other individuals of the same species or with different species, depending on the type of contact that that microorganism has resistance to don't disintegrate.

With the overpopulation of a species, contamination by some type of pathogenic agent may be more accentuated, a classic example of this type of characteristic is COVID-19, in the current year of 2020 [7]. Due to the interaction between individuals of the same species - the human being - the disease managed to promote an adaptation in the individuals, by compatibility of the same gene. Because we are an overpopulated species, we have this ability to transmit quickly and effectively, transforming the disease into an epidemic potential - regional spread - into a pandemic potential - spread globally.

Acknowledgment

With the increase of a population, in an uncontrolled way, the possibility of developing some type of disease is relatively equitable in the population proportion. From an evolutionary point of view, the spread of diseases in overpopulated species is given as an environmental control with a biological equilibrium character, just as there is a need to work on environmental homeostasis, it is necessary to understand the limits that the environment proposes for the perpetuation of a species and their interaction with the environment.

Refernces

1. Rodrigues MG (2009) Research for Biodiversity Conservation in Brazil: Ecology from an interdisciplinary approach.
2. Knoll AH (2015) Life on a young planet: the first three billion years of evolution on Earth-updated edition. Princeton University Press, Princeton, New Jersey, United States.

3. Trevors JT (2010) Total Abuse of the Earth: Human overpopulation and climate change. Water, Air, and Soil Pollution 205(1): 113-114.

4. Ricklefs RE (2003) Nature's economy. Rio de Janeiro.

5. Behjati S, Tarpey OS (2013) Whats is next generation sequencing? Archives of Disease in Childhood-Education and Practice 98(6): 236-238.

6. Elfiving K, Olsen B, Bergström S, Waldenström J, Anders Sjöstedt, et al. (2010) Dissemination of spotted fever rickettsia agents in Europe by migration birds. PLoS 5(1): e8572.

7. Wen J, Kozak M, Yang S, Liu F (2020) COVID-19: potential effects on Chinese citizens' lifestyle and travel. Tourism Review 76(1): 74-87.