

Cancer: A Prehistoric Disease Still a Threat to the Modern Man

Moges Woldemeskel*

Department of Pathology, The University of Georgia, College of Veterinary Medicine, Tifton Veterinary Diagnostic and Investigational Laboratory, USA

Cancer is a general term used to denote malignant neoplasms in humans and animals that if untreated often end up with fatal metastasis. The term “cancer” originated from the word “crab” (*karkinos*) applied to malignant tumors by the ancient Greeks. It is adopted by the Romans (Latin *cancer* means *crab*) and is still in use in the contemporary scientific literature. The most ancient records dated from the paleopathological evidences indicate the existence of cancer in dinosaurs of the Mesozoic and in prehistoric cave man and his animals in the remote past. Later in human history, it was known that Greek and Roman physicians were well acquainted with the different types of malignant diseases specific to each organ [1].

Cancer is not a single disease. Currently more than two hundred different types of cancers that befall humans and animals are recognized. The available comprehensive body of evidence indicates that cancer is a genetic disease; and genomic cellular damage with dynamic changes in the genome underlie virtually all neoplasms that encompass varieties of tissues in humans and animals [2,3]. However, initiation and development of cancer is associated with multifarious causes and predisposing factors such as viruses, chemical mutagens and radiation [2].

Humans have used traditional as well as modern medicine to deal with cancer for centuries. Literature indicates that innumerable drugs, minerals, vegetables, animals, and many kinds of physical and psychological methods have been used to treat cancer patients since the ancient times. The use of caustics and burning irons is recorded. Throughout the middle ages puppies, kittens, chickens, and pigeons have been slit and applied to diseased parts of the body. As late as the beginning of twentieth century, lizards (*Lacerta agilis* and *L. muralis*) were minced and fed raw to cancer patients, as well as applied to their ulcerated tumors [1]. Currently, advances in biomedical sciences and technology have enabled the contemporary medicine to provide sophisticated cancer therapy varying from surgery to molecular targeted therapy. However, cancer is still among the major culprits of health in humans and animals throughout the world.

The current rapid pace in the environmental changes unprecedented in human history has a huge impact on human and animal health. Massive industrial developments, excessive use of pesticides in commercialized agriculture and carcinogen chemicals in various uses in humans and animals have severely polluted our environment. Increasing incidence of cancer among other diseases is implicated in these environmental changes [4]. Tens of millions of new cases emerge and several millions of animals and humans [5] die of cancer every year. Cancer involving various tissues and organs in the body is the second leading cause of human death next to heart diseases in the USA [6]. It incurs hundreds of billions of dollars annually [7] engaging innumerable laboratories and researchers worldwide to study cancers and find an effective therapy. In the USA alone, the annual direct and indirect costs to treat cancer is about two hundred billion dollar [8].

As indicated earlier, treatments against cancer have developed from the use of animal tissues and fluids in prehistoric times, to the use of modern sophisticated surgery, radiation, and chemotherapy. Surgery is effective in cancer treatment in most cases; chemotherapy, however, is not a standard treatment due to chemo-resistance. Currently, cancer treatment has advanced to an efficacious and robust treatment

approaches and options such as molecular targeted therapy including targeted nanomedicine, which has the potential to enhance treatments by overcoming chemo-resistance. Furthermore, genomic signature based personalized medicine may facilitate individual-specific nanomedicine and dose selection for better treatment of cancer in a given patient [9] enlightening more hope in the fight against cancer. However, due to incessant genetic changes and mutations underlying initiation and development of cancers, undoubtedly a lot-in-store still awaits the fight against cancer.

References

1. Haddow A (1936) Historical Notes on Cancer from the MSS. of Louis Westenra Sambon: (Section of the History of Medicine). Proc R Soc Med 29: 1015-1028.
2. Cullen JM, Page R, Misdrop W (2002) An overview of cancer pathogenesis, diagnosis and management. In Meuton, DJ. Tumor in Domestic Animals. (4th edn), Iowa State Press, Ames, IA, USA.
3. Hanahan D, Weinberg RA (2000) The hallmarks of cancer. Cell 100: 57-70.
4. Armelagos GJ, Barnes KC, Lin J (1996) Disease in human evolution: The re-emergence of infectious disease in third epidemiological transition. National Museum of Natural History Bulletin for Teachers 18: 1-6.
5. Ferlay J, Shin HR, Bray F, Forman D, Mathers C, et al. (2010) Estimates of worldwide burden of cancer in 2008: GLOBOCAN 2008. Int J Cancer 127: 2893-2917.
6. Jemal A, Siegel R, Xu J, Ward E (2010) Cancer statistics, 2010. CA Cancer J Clin 60: 277-300.
7. Eckhouse S, Lewison G, Sullivan R (2008) Trends in the global funding and activity of cancer research. Mol Oncol 2: 20-32.
8. American Cancer Society (2013) Economic Impact of Cancer.
9. Wang K, Wu X, Wang J, Huang J (2013) Cancer stem cell theory: therapeutic implications for nanomedicine. Int J Nanomedicine 8: 899-908.

*Corresponding author: Moges Woldemeskel, Department of Pathology, The University of Georgia, College of Veterinary Medicine, Tifton Veterinary Diagnostic and Investigational Laboratory, 43 Brighton Rd, Tifton, GA 31793, USA, E-mail: mwoldem@uga.edu

Received March 25, 2013; Accepted March 27, 2013; Published March 29, 2013

Citation: Woldemeskel M (2013) Cancer: A Prehistoric Disease Still a Threat to the Modern Man. J Clin Exp Pathol S7: e001. doi:10.4172/2161-0681.S7-e001

Copyright: © 2013 Woldemeskel M. This is an open-access article distributed under the terms of the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited.