

CHRONIC OBSTRUCTIVE PULMONY DISEASE (COPD) IN ANCIENT ROME**Dr. Valentine J. Belfiglio***

Texas Woman's University, USA.

***Corresponding Author: Dr. Valentine J. Belfiglio**

Texas Woman's University, USA.

Article Received on 24/02/2021

Article Revised on 16/03/2021

Article Accepted on 06/04/2021

ABSTRACT

Roman and American physicians treated chronic obstructive pulmonary disease (COPD) with similar protocols. Methodology: Historiography and conceptual analysis of the writings of physicians in ancient and modern times. Results: Ancient and modern physicians used a similar protocol for the diagnosis of COPD. This protocol included: (1) subjective information from the patients, (2) the objective findings of physicians, (3) assessment of these findings and their correlation with other patients with similar subjective and objective data, (4) formulating a treatment plan. They also used a similar protocol for treatment of COPD. This protocol included: (1) Mitigation, (2) Treatment of symptoms, and (3) Treatment with. Bronchodilators anti-inflammatory medicines. Conclusion: Roman and American physicians treated COPD with similar protocols. The change involves modern immunizations, assessments, and advanced therapies unknown to the ancient Romans.,

KEYWORDS: Pandemic, Active Immunity, Passive Immunity, Protocol, Ancient Rome.**INTRODUCTION**

Because Chronic Obstructive Pulmonary Disease (COPD) has posed a threat to humanity throughout history, this study focuses on its existence and treatment during the Roman Empire between 27 B.C. and A.D. 476 and the United States of America in 2021. There are five reasons for selecting ancient Rome and the United States. The first reason is that both States were superpowers in the forefront of medical advances of their time. For the purpose of this study –superpower means a state having military capabilities, natural resources and economic viability to a point that it is able to exercise control or compelling influence over nations and territories in more than one continent. The basis for selecting Rome over other medically progressive, ancient States such as Greece and Egypt are that Roman physicians adopted and advanced the medical techniques of these States. This was especially true after Greece became a province of the Roman Republic in 146 B.C. and Egypt became a province of the Roman Empire in 30 B.C. The second reason is both the United States and Rome are part of Western Civilization. As such, the two States share cultural similarities different from Sinic, Japanese, Hindu, Islamic Slavic or sub-Saharan African civilizations.^[1] Some of these similarities include the rule of law, the ideal of a republic, similarities in military organization,^[2] and use of Latin in the English language, particularly in law and medicine. The authors of the Federalist Papers (1787-1788) carefully studied the ancient Greek confederations and Roman republic in their arguments for the states to ratify the U.S.

Constitution. Federalist paper #18 explains why they decided on the Roman model rather than the Greek model.^[3] The third reason for selecting Rome and the United States is that Rome was the only city of antiquity with a population of one million people or more.^[4] Heavily populated cities such as ancient Rome, modern New York or Los Angeles contain factors which facilitate COPD. The fourth reason is that people in the United States and Roman Empire suffered health and economic issues because of COPD.^[5] The fifth reason is that the study permits the researcher to compare and contrast protocols used to address COPD over an extended period of time and of place.

Scope and Method

The thesis of this paper is that the protocols addressing COPD by Roman and American physicians are similar. The methodology employs historiography and conceptual analysis based on writings of modern and ancient physicians, inscriptions, pictorial sources, coins and archaeological discoveries. The study will compare and contrast the techniques employed to identify and treat COPD. The results will show that American and ancient, Roman physicians employed, similar nonpharmacological and pharmacological treatment of COPD. The conclusions and implications indicate that the past is prologue to the future. Comparative perspectives about COPD enrich and challenge our perspective about the response to this disease.

Primary Sources

Aulus Cornelius Celsus (first century A.D.) wrote a

study of medical techniques and medicines, Pedanius Dioscorides (A.D. 40-80) compiled an extensive list of drugs and other materials used in medicine. Claudius Galen (A.D. 129-200) developed a systematic approach to medical procedures, and Paulus Aegineta (625-690) wrote a medical encyclopedia, in seven Books. Flavius Renatus Vegetius (4th century A.D.) wrote a chapter on desirable physical conditioning and mental acuity for entry into the Roman legions. Dio Cassius, Flavius Eutropius, Aelius Herodianus (Herodian), and Galen discuss the diagnosis and treatment of COPD.^[6]

Chronic Obstructive Pulmonary Disease

COPD is a disease process that decreases the ability of the lungs to perform ventilation.^[7] The airflow limitation is often caused by a mixture of small airway disease and parenchymal destruction. COPD is an enhanced chronic inflammatory response to the airways and lungs to noxious particles or gases. Common noxious particles or gases include tobacco smoke, occupational dusts, chemicals, and air pollution. Symptoms of COVID may include cough, excess mucous production, chest tightness, breathlessness, dyspnea, difficulty sleeping and fatigue. The severity of COPD correlates with the amount of airflow limitation from mild to very severe.^[8] Respiratory failure is a common COPD-related **cause of death**. After months, years, or even decades of struggling with lung problems, the lungs eventually stop working altogether. Heart failure is also a factor for COPD fatalities, with COPD often contributing to heart problems.^[9]

To diagnose COPD Roman physicians relied on patient information and an objective evaluation of the aforementioned symptoms. Modern physicians rely on these two factors as well but have advanced techniques to more accurately diagnose COPD. These methods include a spirometer which can measure how well the lungs can move air in and out, the forced expiratory volume (FEV) measures the total amount of air one can breathe out in one second, and the forced vital capacity (FVC) measures the total amount of air one can breathe out of the lungs after taking a full breath.^[10] Modern physicians have far more options than the ancient, Roman physicians to formulate a treatment plan.

According to the Centers for Disease Control and Prevention, tobacco is a key factor in the development and progression of COPD in the United States.^[11] The World Health Organization (WHO) reports in addition to tobacco smoke, other risk factors include air pollution, occupational chemicals and dusts, and frequent lower respiratory infections during childhood. COPD is not curable, however, various forms of treatment that help dilate major air passages and improve shortness of breath can help control symptoms and increase the quality of life for people with the disease.^[12] The ancient Romans did not use tobacco products since Europeans learned about tobacco from the Spanish explorers of the Americas only after Christopher Columbus four voyages

there. Columbus wrote in his Diario, on Tuesday November 6, 1492 about Native Americans —with a firebrand of weeds in their hands to take in the fragrant smoke to which they are accustomed.^[13]

The COPD suffered by the Romans arose from particulate pollution coming from certain indoor practices. These practices include burning animal and vegetable oils in terracotta lamps, cooking techniques using burning wood in fireplaces which also provided heat in winter. The combination produced indoor pollution with high quantities of carbon and other noxious particles and gases. The homes of wealthy patricians enjoyed a form of central heating provided by a single furnace under the floor, with hot air flowing through a hypocaust. Poor plebeians lived in small, poorly ventilated rooms in high-rise insulae, overcrowded from the attics down to the basements.^[14] Many plebeians suffered from a form of anthracosis due to the noxious smoke and dust they inhaled.^[15] Paulus Aegineta, a Greek physician, clearly defines symptoms compatible with COPD.^[16]

Treatment of Copd

Nonpharmacological treatment of COPD includes removal of the patient from the causative noxious particles and gases, pulmonary rehabilitation and regular physical exercise. Modern and Roman physicians (medici) recommended these changes. Aulus Celsus advocated traveling, long voyages, resting at sea-side resorts and swimming. He also recommends a bland diet to encourage relief of the symptoms. Celsus specifically mentions milk and eggs^[17]. However, there were a number of other foods utilized by Roman physicians for COPD,^[18] (see Table).

Pharmacological treatment of COPD by the medici included herbal medicines with bronchodilator and anti-inflammatory properties. Roman medici used Butterbur (*Petasites hybridus*), which contains petasin an anti-inflammatory, as part of the regimen for the treatment of COPD. They often combined it with turmeric (*Curcuma domestica*), which contains the anti-inflammatory curcumin.^[19] Patients with mild coughs received the powdered inner bark of the slippery elm tree (*Ulmus glabra*).^[20] Patients with severe coughs received a small draught of opium (*Papaver somniferum*) in wine, and the medici used Coltsfoot (*Tussilago farfara*) as a demulcent. Opium contains codeine and morphine which suppress coughs. Coltsfoot contains polysaccharides and flavonoids which have anti-inflammatory, immunostimulant, antispasmodic and demulcent properties.^[21]

Modern physicians have a large array of therapies unknown to the ancient Romans. Some of these includes bronchodilators as anticholinergics, B2 agonists, methylxanthines, inhaled corticosteroids and phosphodiesterase-4 inhibitors, oxygen administration, immunizations for influenza and pneumococcal

vaccinations, sophisticated questionnaires, and other treatments.^[22]

CONCLUSION

Roman and American physicians diagnosed and treated chronic obstructive pulmonary disease (COPD) with similar protocols. Diagnostic protocols included: (1) subjective information from the patient, (2) the objective findings of physicians, (3) assessment of these findings (4) formulation of a treatment plan. However, the Romans lacked the sophisticated CAT questionnaire, GOLD guidelines and spirometry testing. Treatment protocols included (1) mitigation, (2) treatment of symptoms and (3) treatment with bronchodilators and anti-inflammatory medicines. However, modern physicians have techniques and advanced pharmaceuticals unknown to the ancient Romans.

Table: Foods Containing Anti-Inflammatory Or Bronchodilation Properties^[22]

Anti-inflammatory foods

- Olive oil. (contains oleocanthal)
- Mushrooms. (contains phenols and other antioxidants)
- Fatty fish like salmon, and tuna. (contains omega-3 fatty acids)
- Fruits such as strawberries, and cherries. (contains anthocyanins)

Bronchodilator foods

- Vitamin D-rich foods, such as milk and eggs.
- Beta carotene-rich vegetables, such as carrots and leafy greens.
- Magnesium-rich food, such as almonds.

REFERENCES

1. Samuel P. Huntington, *the Clash of Civilizations*, 45-46.
2. John Keegan, *A History of Warfare*, 263-281.
3. Mary E. Webster, *The Federalist Papers*, 11.
4. Mary T. Boatwright, *The Romans from Village to Empire*, 380.
5. Yuri Zelener, *Smallpox and the Disintegration of the Roman Economy after 165 A.D.*, 28-104.
6. Pedanius Dioscorides, *About Medical Materials*, 2017; Claudius Galen, *Method of Medicine*, 2011; Paulus Aegineta, *The Seven Books of Paulus Aegineta*, 1846; Aulus Celsus, *On Medicine*, trans. G.F. Collier, 1831; Flavius R. Vegetius, *Epitome of Military Science*, 1993. Dio Cassius, *Roman History*, 1922; Flavius Eutropius, *Abridgement of Roman History*, 2019; Herodian, *Roman History*, trans. Charles R. Whittaker, 1970.
7. Clarence W. Taber, *Taber's Cyclopedic Medical Dictionary*, 385.
8. Kyle Melin and Maria Maniscalco-Feichtl, *Chronic Obstructive Pulmonary Disease*, in Karen Whalen *Medication Therapy Management*, 285-286.
9. Adrian Shifren, *Pulmonary Medicine*, 83.
10. Melin and Maniscalco-Feichtl, *Chronic Obstructive Pulmonary Disease*, 288.
11. Basics about COPD Centers for Disease Control and Prevention (CDC), March 2021.
12. Chronic respiratory diseases, World Health Organization (WHO), March 2021.
13. Christopher Columbus, *The Diario of Christopher Columbus'First Voyage to America 1492-1493*, Folio, 21: 139.
14. Florence Dupont, *Daily Life in Ancient Rome*, 150-151.
15. Claudius Galen, *Method of Medicine*, 5.15 (378-379K). Paulus Aegineta, *The Seven Books of Paulus Aegineta*, 3.29-32.
16. Paulus Aegineta, *The Seven Books of Paulus Aegineta*, 3.29-32.
17. Aulus Celsus, *On Medicine*, 4.4.
18. Pedanius Dioscorides, *About Medical Materials*. (Table)
19. Pedanius Dioscorides, *About Medical materials*, 1.5; 4.107.
20. Pedanius Dioscorides, *Of Medical Materials*, 1.69, 86-89. Slippery elm contains mucilage which acts as an antitussive. The bark also contains flavonoids which are anti-inflammatory.
21. Pedanius Dioscorides, *Of Medical Materials*, 4.64, 3.112. Only small quantities of opium were used, as in largedoses it may cause respiratory depression.
22. Kyle Melin, *Chronic Obstructive Pulmonary Disease*, 289-295.
23. Aegineta, Paulus. *The Seven Books of Paulus Aegineta*. Vol. I Translated by Francis Adams. London: TheSydenham Society, 1846.
24. Apicius, Caelius, *Roman Cookery*, trans. By John Edwards. London: Hartley & Marks, 1985.
25. Baker, Patricia. *Roman Medical Instruments: Archaeological Interpretations of their Possible Non- functional Uses.* Social History of Medicine, 2004; 17.1.
26. Belfiglio, Valentine. *Treatment of Flesh Wounds in the Roman Army*. *The International Journal of Interdisciplinary Civic and Political Studies*, 2014; 9(1): 1-2.
27. *Acute Pain Management in the Roman Army*, *Anesthesia, Pain & Intensive Care*, 2017; 21(3): 383-86.
28. *Control of epidemics in the Roman army: 27 B.C. - A.D. 476.* *International Journal of Community Medicine and Public Health*, 2017; 4(5): 1387-1391.
29. *The Treatment of Equine Flesh Wounds in the Roman Army.* *The International Journal of Interdisciplinary Civic and Political Studies*, 2018; 12(4): 1-7.
30. *Perioperative Anesthesia in Ancient Rome.* *Neurology and Neuroscience Reports* 1 (2018): 1-3. Black, Henry C. 1979. *Black's Law Dictionary*. St. Paul, MN: West Publishing Co., 2018.
31. Blumberg, Arnold. —A Fundamental Element of Classical Roman Warfare, *The Marching Camp Was Both anOffensive and Defense Tool.* *Military*

- Heritage*, 5: 10–15.
32. Boatwright, Mary T. *The Romans: From Village to Empire*. Oxford: Oxford University Press, 2004.
 33. Campbell, Phillip. *The Complete Works of Saint Cyprian of Carthage*. Merchantville, New Jersey: EvolutionPublishing, 2013.
 34. Cassius, Dio. *Roman History*. trans. by Ernest Cary, London: William Heinemann. Cato, Marcus. 2004. *On Farming*. Translated by Andrew Dalby. Paris: Prospect Books, 1922.
 35. Celsus, Cornelius. *De Medicina [On Medicine]*. Translated by G. F. Collier. Cambridge: Harvard University Press, 1961.
 36. Center for Disease control and Prevention. Atlanta, Georgia, Basics About COPD. Clayton, Thomas L. 1997. *Taber's Cyclopedic Medical Dictionary*. Philadelphia: F. A. Davis. Davies, Roy W. 1989. *Service in the Roman Army*. New York: Columbia University Press, 2021.
 37. Dioscorides, Pedanius. *De Medica Materia [About Medical Material]*. Zurich: Weidmann. Dixon, Karen R., and Pat Southern. 1992. *The Roman Cavalry*. London: B.T. Batsford, 2005.
 38. Eutropius. *Abridgement of Roman History*, XXXI: 6.24.
 39. Gabriel, Richard A., and Karen S. Metz. *A History of Military Medicine. Volume 1, From Ancient Times to the Middle Ages*. New York: Greenwood, 1992.
 40. Galen, Claudius. *De Methodo Medendi [Method of Medicine]*. Cambridge: Harvard University Press, 2011.
 41. U.S. Department of Labor, Bureau of Labor Statistics. Table A-5. Employment Status for the civilian population 18 years and over, Washington, D.C., May 9 2020.
 42. U.S. Food and Drug Administration, White Oak, Maryland, 2020.
 43. Varro, Marcus T. *Agriculture Business*. trans. Thomas Owen, 1800.
 44. Vegetius, Flavius Renuus. 1993. *Epitome of Military Science*. Liverpool: Liverpool University Press. World Health Organization. Geneva, Switzerland, 2021.
 45. Chronic Respiratory Diseases.
 46. Heinrich, Michael. *Fundamentals of Pharmacognosy and Phytotherapy*. London: Elsevier (ChurchillLivingstone), 2012.
 47. Herodian. 1970. *Roman History*. trans. Charles R. Whittaker, London: Loeb Classical Library. Huntington, Samuel P. *The Clash of Civilizations*, New York: Simon & Schuster, 1996.
 48. Jackson, Robert. 1988. *Doctors and Diseases in the Roman Empire*. Norman: University of Oklahoma Press. Jones, A. H. M. *The Later Roman Empire*. Oxford: Basil, Blackwell, 1973.
 49. Kraemer, Henry. 1908. *A Textbook of Botany and Pharmacognosy*. Philadelphia: J.B. Lippincott. Keegan, John. *A History of Warfare*. New York: Vintage Books, 1993.
 50. Le Glay, Marcel. *A History of Rome*. Malden, MA.: Blackwell, 2005.
 51. Marcellinus, Ammianus. *The Later Roman Empire: (AD 354-378)*, New York: Penguin Books, 1986.
 52. Martialis, Quintus. *Medicine*. Translated by Valentine Belfiglio. Leipsic, Germany: B.G. Teubneri, 1875.
 53. Melin, Kyle. Chronic Obstructive Pulmonary Disease, in Karen Whalen Medication Therapy Management. New York: McGraw-Hill, 2018.
 54. National Institutes for Health. Situation Reports. Bethesda, Maryland, 2020.
 55. Norrie, Philip. *A History of Diseases in Ancient Times*. Bern, Switzerland: Palgrave Macmillan, 2016.
 56. Polybius. *The Histories of Polybius*. London: William Heinemann, 1992.
 57. Shifren, Adrian. Pulmonary Medicine. Department of Medicine, Washington University School of Medicine. Sperry Joel A., and Leo F. Rettger. 1912. -The Antiseptic and Bactericidal Properties of Egg-White. *Journal of Medical Research*, 2017; 1: 55–64.
 58. Unstead, Robert J. *A Roman Town*. New York: Barnes & Noble, 1995.