Lettera all'Editore

Letter to the Editor

Breast milk, an antigenic factor against infections in Ancient Greece

Latte materno: un fattore antigenico contro le infezioni nella Grecia antica

Konstantinos Laios[1], Gregory Tsoucalas[1], Marianna Karamanou[1], Ioannis Tsoucalas[2], George Androutsos[1]

[1]History of Medicine Department, University of Athens, Greece;
[2]Private physician, Chania, Greece

Several physicians in Ancient Greece noted the antibacterial and anti-inflammatory properties of breast milk. The elements contained in the milk could strengthen the body's defences and prevent serious infections from being fatal. Aeons before Hippocrates, Egyptians, according to the Greater Papyrus of Berlin dating from 1350 BC, were using breast milk, as well as donkeys', goats' and cows' as a common medicine. It remains uncertain whether the Greeks were the first to use it, or they had embraced the remedy from the Egyptians [1, 2].

Euryphon of Cnidus and Herodicus the Selymbrian, both physicians of the 5th century BC, considered breast milk as "a product of nature and thus a natural medicine" suitable against various diseases.

"Its best quality is when suckled directly from the breasts, fresh and warm", "it can be used for every disease of phthisis (consumption)" (Greek: Φθινωδη πάθη). Diseases which provoked weakness and significant weight loss like tuberculosis and pneumonia were among the first to be cured with breast milk [3-8]. Prodicus of Ceos (c. 465 BC - 395 BC) also suggested breast milk for treating tuberculosis, "especially for those who have melted from the disease". They all believed that breast milk could "help the restoration of the body weight within normal levels" [9, 10].

Corresponding author
Ioannis Tsoucalas
E-mail: gregorytsoucalas@yahoo.gr

Hippocrates (c. 460 BC - c. 370 BC) believed that "milk does good in consumptives who do not have high fever, as well as in patients with languor and long time fevers … and when the exhaustion is very great", an opinion familiar also to Herodotus of Antalya (c. 1st century AD) and Theophilus Protospatharius (c. 7th century) [11-16]. Aretaeus the Cappadocian (1st century AD) considered it a medicine for hoarseness of voice and inflamed tonsils, capable of cleaning the bronchus and assisting in expelling phlegm during a respiratory system infection. He also used it against the infection of skin wounds and ulcers [17]. Pliny the Elder (AD 23 - AD 79) used breast milk as disinfection ointment, while Galen (AD 129 - c. 200/c. 216) used it as eye drops to treat various ocular infectious diseases (18, 19). Rufus of Ephesus (fl. late 1st century AD) and Aetius of Amida (mid-5th century to mid-6th century AD) also supported breast milk as a useful medicin [20, 21].

Modern scientific studies indicated that breast milk, rich in immunoglobulin IgA, proteins, carbohydrates, fat and some growth factors, support the immune system and furthermore protect against the development of infection involved in innate and specific immunity, intercellular communication, immunomodulation, and inflammatory processes [22]. Ancient Greek physicians, masters in observing symptoms and recording pathology and physiology, had understood the significance of breast milk and placed it in their therapeutic quiver.

Keywords: breast milk, antigenic factor, ancient Greece.

REFERENCES

[1] Tsoukalas I. Neonatology and child care in Ancient Greece and Byzantium. Science Press, Chania and Thessaloniki. 273-274, 2006.
[2] Emmanouil E. The history of pharmacy. Pyrsos, Athens. 1-10, 1948.
[3] De morbis i-iii, ed. É. Littré, Oeuvres complètes d'Hippocrate, vol. 7. Baillière, Paris. (Cod: 26,143: Med.). 104, 1851.
[4] Gynaeciorum libri iv, ed. J. Ilberg, Sorani Gynaeciorum libri iv, de signis fracturarum, de fasciis, vita Hippocratis secundum Soranum, Corpus medicorum Graecorum. Teubner, Leipzig. (Cod: 42, 426: Med.). 4, 3-152, 1927.
[5] Daremberg C., Ruelle C.É. Oeuvres de Rufus d'Éphèse. Imprimerie Nationale, Paris. 147-151, 1879.
[6] Kühn C.G. Claudii Galeni opera omnia. C. Cnobloch, Leipzig. 7, 8, 10, 11, 15, 17, 19, 1821-1823.
[7] Censorinus. De die natali liber. Otto Jahn (Ed.). Olms, Hildesheim. Liber VII. 1965, 5-6.
[8] Drabkin I.E. Caelius aurelianus. On acute diseases and on chronic diseases. (Ed. and Trans.) University of Chicago Press, Chicago. 1950, 642 & III, 390-392, 802.
[9] Diels H., Kranz W. Die Fragmente der Vorsokratiker. Fragmenta, ed. Weidmann, Berlin. 2, 6th edn, 1952, F 11.
[10] Galen. De methodo medendi libri xiv. Knobloch, Leipzig. (Cod: 163,139: Med.). X, 473-475, 1825.
[11] Littré É. Hippocrates. Aphorismi, ed. Oeuvres complètes d'Hippocrate. Baillière, Paris. (Cod: 7,374: Med.). 4, 558, 1844.
[12] Olivieri A. Iatricorum liber iv. ed. A. Teubner, Leipzig. (Cod: 14,928: Med.). 1825.
[13] Olivieri A. Iatricorum liber v. Aecorum, medicinales v-viii. Akademie-Verlag, Berlin. (Cod: 33,099: Med.). 6-119, 1950.
[14] Zervos S. Iatricorum liber ix, ed. Αετιου 'Αμιδηνοπ λόγος ενατος". *Athena*. (Cod: 35,935: Med.). 23, 273-390, 1911.
[15] Zervos S. Iatricorum liber ix, ed. Αετιου 'Αμιδηνοπ λόγος δεκατος πεμπτος. *Athena.* (Cod: 26,668: Med.). 21, 7-138, 1909.
[16] Dietz F.R. Commentarii in Hippocratis aphorismos. Scholia in Hippocratem et Galenum. Hakkert, Amsterdam. 236, 238-240, 244-544, 1966.
[17] Hude K. Aretaeus. De causis et signis acutorum morborum (lib. 1). Aretaeus, 2nd edn. Akademie Verlag, Berlin. (Cod: 9,771: Med.). 3-35, 1958.
[18] Rackham H., Jones W.H.S., Eichholz D.E. Pliny. Natural History, 10 volumes. Loeb Classical Library. Harvard University Press, Cambridge. 86-106, 1938-1962.
[19] Kühn C.G. Claudii Galeni opera omnia. C. Cnobloch, Leipzig. 11, 582, 586, 588, 601, 620, 751, 764, 865, 1821-1823.
[20] Olivieri A. Iatricorum liber. A1-63, medicinales i-iv. Teubner, Leipzig. (Cod: 29, 821: Med.). 152-255, 1935.
[21] Olivieri A. Iatricorum liber. A0, medicinales i-iv. Teubner, Leipzig. (Cod: 34,188: Med.). 17-146, 1935.
[22] Lis J., Orczyk-Pawiłowicz M., Katnik-Prastowska I. Proteins of human milk involved in immunological processes. *Postepy Hig. Med. Dosw.* 31, 67, 529-547, 2013.