

Giampiero Pasero, *Una piccola storia dell'aspirina*, Edizioni Clinical and Experimental Rheumatology, Ospedaletto (Pisa) 2018, pp. 44

Special limited edition, that the Author dedicates to his friends, colleagues and students on the occasion of his ninetieth birthday.

A quick search for the word "aspirin" in *PubMed* portal produces over 63,000 results. This number is certainly huge, but very low when compared to the number of tablets produced and consumed. In fact, it is estimated that 10^{18} aspirin tablets have been taken over the last 100 years.

Such a number is really difficult to imagine, but it reflects the spreading and use of a drug about which thousands of pages in the History of Medicine have been written. Giampiero Pasero – former professor of Medical Pathology and Rheumatology - goes through these same pages in his captivating work *A Little History of Aspirin*.

The use of salicylates has indeed an ancient origin: Sumerians, Egyptians, Greeks and Romans used willow leaves infusions against fever and pain. Further on, the ingenuity of father Edward Stone opens the path for a "systematic" use of drugs based on salicylates: in 1757, while on a walk, father Stone tasted willow bark and found it bitter like the cinchona bark. He hypothesized, by analogy, that it could be equally useful in fighting diseases such as malarial fever. Stone then began to treat his patients suffering from fever (malarial or not) with willow bark based drugs. In 1763 he communicated his findings to the *Royal Society* and soon the antipyretic effect was confirmed by the medical community. The Italians Rigatelli and Fontana, in 1824, extracted the first samples of active substance from willow bark – even though the final isolation of the powerful therapeutic substance called *salicin* took place in 1827 by Johann Andreas Büchner. Salicylic anhydride was extracted in 1831 and salicylic acid, in 1835. In 1844, salicylic acid was extracted from willow bark, but also meadowsweet flower and gaultheria oil. A few years later, in 1853, salicylic acid was synthesized by Henri Gerland and in 1859 a synthesis of acetylsalicylic acid was obtained by Hermann Von Gilm (maybe by Charles Fréderic Gerhardt in 1853). Since 1874 salicylates were officially used for the symptomatic treatment of acute rheumatism and the following year they were proposed for treating also chronic rheumatism and gout.

In the 90s of the 19th century, thanks to the collaboration of Arthur Eichengrün, Felix Hoffmann and Thomas Dreser, a series of fortunate circumstances led to the final synthesis of stable and pure acetylsalicylic acid on the 10th August 1897 and its registration by Bayer, as Aspirin, on February 1899. From then until the introduction of cortisone and NSAIDs at the end of the 40s of the 20th century, Aspirin prevailed as the most common anti-rheumatic drug in the market. It is indeed an extraordinary drug: it reduces fever, pain, inflammation and, obviously, acute articular rheumatism.

When progress in pharmacology produced new drugs for Rheumatology (but not only) and Aspirin lost ground, acetylsalicylic acid, thanks to the ingenuity of Lawrence Craven in 1948, began to be proposed for anti-thrombotic prophylaxis, thus effectively opening the path for myocardial infarction prevention.

This drug, as Prof. Pasero explains, still hides many resources, including some important opportunities for preventing dementia and some forms of cancer (colorectal carcinoma).

This is the compelling and still to be discovered "great little" story, of a drug that we daily use in clinical practice and that, let's not forget, arrived even to the moon.

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