Atropine (Atropa belladonna)

Atropine is an anticholinergic drug extracted from deadly nightshade (Atropa belladonna) and from other plants of the Solanaceae family. It is used in medicine to diminish the muscarinic effects of acetylcholinesterase inhibitors. This drug is named after the way Carlo Linne, the Swedish botanist, physician, and zoologist who laid the foundations for the modern biological naming scheme of binomial nomenclature, named the plant from which it is extracted: Atropa belladonna.

Atropine is a competitive antagonist of muscarinic acetylcholine receptor and thus it is used in medicine to diminish the muscarinic effects of acetylcholinesterase inhibitors, as preanesthesia medication and for the treatment of bradycardia and asystole. It is also used to diminish gastrointestinal motility and as mydriatic.

Furthermore, it is widely used as antidote in the case of organophosphate poisonings as it relaxes smooth muscles and avoids death by suffocation produced by these substances since organophosphates induce the antagonist effect to atropine: they possess acetylcholinesterase inhibitors and therefore perpetuate the effect of acetylcholine.

I still remember the mnemotechnical rule we were taught in Pharmacology lessons to be able to remember symptoms and signs of atropine poisoning: ROSECATAMILO (Spanish letters for RED, DRY, HOT, TACHYCARDIA, MYDRIATIC AND MAD).

Ancient Indians knew the belladonna preparations and Indian physicians used it for many centuries. It was also used in Ancient Egypt as narcotic and afterwards by Syrian to “push aside sad thoughts”. During Roman Empire times, and also in Middle Age, the shrub was frequently used to produce gradual progression poisoning.

This resulted in Swedish physician Carl Nilsson Linne (1707-1778), founder of modern taxonomy and creator of the binomial system, naming the plant Atropa Belladonna, in reference to Atropos, the oldest of the three Moiras (Romans used to call them Parkas).

In Greek Mythology Atropos (in Greek Ἀτρόπος, “inexorable” or “inevitable”), chose mortals’ mechanism of death and finished with them by cutting the thread of life with his scissors. Atropos used to work with Cloto (in charge of spinning the thread) and Lachesis (measuring its length).
Fig. 1. Carlo Linneè, Swizz natural scientist, botanist and zoologist who gave the name Atropa belladonna.
observations recorded have shown that pupil dilates in a state of sexual excitement.

Respondents were more attracted by the woman who they perceived more sexually stimulated.

Women have somewhat perceived that a long time ago. Cleopatra, 50 years before Crist, used henbane and mandrake (other solanaceae plants) to dilate her pupils and thus being more attractive.

During XVI to XVII centuries, women of Italian courts were devout to the use of atropine which they use before attending at to nobility balls to provoke mydriasis (usually by rubbing the fruit in the eyelids) and thus being a “belle donne”. Leonardo Da Vinci (1452-1519) Giaconda’s eyes have some degree of mydriasis, and this has been proposed as one the reasons for her charm.

Such practice was reused in Paris by the end of XIX century.

The mydriatic effect of atropine has been studied, among others, by German chemist Friedrich Ferdinand Runge (1795-1867) who also identified caffeine in coffee.

Atropine was first synthesized by German chemist Richard Willstätter in 1901 who, in the year 1915, won the Nobel Prize for Chemistry for his chlorophyll discovery.

For many centuries, women's search for beauty stimulated many inventions that have influenced on other words, some of...
Female habit of blackening eyelids was already present in Ancient Egypt (Nefertiti and Cleopatra) as well as in the aesthetic model of Middle Age Mediterranean countries (again Italians) and they did it by means of a dust made from antimony. Such dust was named “alcohol” by some Spanish authors of the XIII century and the term came from the vulgar Arab “al kohól”, which meant, precisely, “antimony”.

Antimony was heavily grinded until obtaining such dust, and by the year 1500 the word was already used to refer to “any essence obtained by grinding, sublimation or distillation”.

Paracelsus (1493-1591), the Swiss multifaceted physician was the first one to call “alcohol” to wine spirit. Hence the category of “spiritual”, applied to alcoholic beverages. Let’s drink to that.

**BIBLIOGRAPHY**


