Identifying historical facts that can enhance the teaching of Pharmacology

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Background. Pharmacology is an important subject in many university undergraduate programmes. Like other disciplines, pharmacology can be taught with different strategies, from lectures to problem-based learning sessions. This study aimed to select some historical facts related to the first antimicrobials that can be used to enhance the teaching of pharmacology.

Methods. We examined articles in scientific journals and materials in pharmacology textbooks related with the first antimicrobials: arsphenamine, sulphonamides, and streptomycin. Subsequently, we searched The New York Times, The Times of London, and the Spanish newspaper La Vanguardia for news on these drugs published between 1908 and 1979 to identify historical facts and anecdotes that could be attractive for teaching. Finally, we wrote a brief summary of each selected issue and created a card to use for teaching purposes that included a title for the historical fact, a summary, some images, and the selected references.

Results. A review of 50 scientific review articles, 82 books, and 3,078 news articles yielded 26 key historical issues: 13 related to arsphenamine, 9 to sulphonamides, and 4 to streptomycin. As examples, we included the story of 606, the initial name for arsphenamine (Fig. 1); the controversy surrounding the patent for Prontosil; and sexist discrimination against Elizabeth Bugie in assigning credit for the discovery of the streptomycin. Other selected historical facts addressed issues such as new approaches to administration, drug toxicity, new indications for drugs, patents, commercial interests, and the use of drugs during war.

Conclusions. Reviewing historical information related to drugs makes it possible to identify facts and anecdotes that can enhance the teaching of pharmacology. Interesting anecdotes about arsphenamine, sulphonamides, and streptomycin can serve not only for teaching antimicrobials, but also for teaching pharmacology in a much broader sense.