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Editorial

Recommendations for Exacerbations of Superinfected Bronchiectasis by *Pseudomonas*. What about quaternary prevention?

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Recomendaciones para las exacerbaciones de bronquiectasias superinfectadas por *Pseudomonas*. ¿Qué hay de la prevención cuaternaria?

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Quaternary prevention is the set of measures taken to avoid, reduce, or alleviate the harm caused by healthcare activities [1]. An identical idea to the Hippocratic message of "non nocere" (do no harm) and although it now seems to be very fashionable (multiple campaigns promoting "Not to do", "deprescribing", "rational use of medications"...) quaternary prevention is a concept that has not received much attention until recent years ("quaternary prevention" was not included

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as a MeSH term until 2020) [2].

Although the concept is accepted without any opposition among professionals, in our daily practice we find ourselves immersed in clinical actions that call into question (unintentionally, of course) quaternary prevention [1]. In addition, not only due to decisions made in personal actions. We also incur this by following the recommendations of clinical guidelines based on scarce evidence and/or not adjusted to the reality of the patients we treat in our daily practice.

This is the case, for example, of the recommendation given for patients with superinfected bronchiectasis by *Pseudomonas aeruginosa* with recurrent episodes. Several summaries reflect that the preventive method of choice is the intake of Azithromycin 500 mg three times a week or 250 mg daily [3, 4]. The authors base their recommendations on the studies available so far, some with adjusted sample sizes and/or with the inclusion of patients with different characteristics from those, we can manage in our consultations. In these texts, the advantages and disadvantages of the treatment are explicitly narrated, with the authors clearly positioning themselves in favor of the recommendation [4]. Among the comments they provide, it´s surprising that although the reviewed studies have been designed for 6 and 12 months [5], they advise maintaining the treatment "indefinitely." There is no record that they base this decision on any specific data or finding in the literature, so we understand therefore that it resembles a recommendation as expert opinion (remember that in the evidence level pyramid, expert opinion is at the lowest levels) [6]. They explain the reduction of exacerbations among those taking azithromycin versus those taking placebo (there do not seem to be studies comparing the macrolide with another medication). However, the information does not end there: the authors show great sensibility and honesty in detailing the problems that this therapy can entail. They explain that not everything is improvement for the patient [3, 4, 7].

- Pulmonary function and quality of life remain unchanged whether they take placebo or antibiotic;
- The rates of colonization by germs resistant to Azithromycin skyrocket;
- Cases of diarrhea, abdominal pain, and other gastrointestinal discomfort increase;
- Hepatotoxicity may appear;
- Cases of decreased hearing have been described;
- Moreover, as a group effect, not only of azithromycin, the authors recall that prolonged use of macrolides can be related to a higher rate of cardiovascular events (prolongation of the QT interval, hypokalemia, hypomagnesemia, significant bradycardia, bradyarrhythmias, or decompensated heart failure).

If we reflect on the characteristics of the patients who usually present superinfection of bronchiectasis by *P. aeruginosa* with exacerbations, they are generally elderly, frail, polymedicated patients with multiple comorbidities [1]. Initially, these do not seem to be the ideal candidates to subject them to the risk that the indefinite consumption of azithromycin seems to entail with the undesirable effects that it can produce.

With this comment, we do not intend to question any of these summaries; do not understand it this way. We congratulate and applaud the quality of the review by the authors of the main clinical guidelines in this field, the recommendation documents and the summaries. We know how complicated it is to review a topic of these characteristics. However, if we respect and do not forget what the term “quaternary prevention” entails [1], doubts and questions arise as to whether actions as apparently risky as this are sufficiently justified in patients as weak as these [1].

We therefore consider it important to keep quaternary prevention very much in mind in our daily work. It is obvious that at the professional level we must demand of ourselves continuing education and provide the best possible care for our patients. However, we must also be self-critical and individualized when it comes to prescribing treatments or exposing patients to clinical tests or complementary examinations. Quaternary prevention must always prevail in the practice of our profession and we physicians must respect what this concept implies. We must remain alert so as not to indiscriminately accept everything that the clinical guidelines and recommendations indicate, choosing which patients and at what times it may benefit them or, on the contrary, put them at risk. Only in this way will we be able to work keeping on the horizon the idea of achieving the maximum benefit for our patients [1, 8, 9].

1. CONFLICT OF INTERESTS

The authors have no conflict of interest to declare. The authors declared that this study has received no financial support.

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