Antibiotics or no antibiotics, that is the question

We are working hard to maintain our ambitious promise to make EJOI an evidence-based scientific and educational tool useful for clinicians in everyday practice. While it is easy to make declarations of good intentions, it is usually more difficult to keep them. We shall certainly do our utmost to achieve this goal. To be successful we need to attract the best clinical research to EJOI, and this is not easy, as the competition among journals is very strong. However, in this issue I believe we provide some useful suggestions for clinicians.

The question of whether antibiotic prophylaxis at implant placement could be effective in reducing early failures of dental implants arose in the 1970s, but we had to wait for more than a quarter of a century for a preliminary evidence-based answer. Only this year were two independent randomised clinical trials finally published on this matter. While both trials had individual sample sizes too small to detect a statistically (and clinically) significant difference, the meta-analysis of the two clearly suggested that 2 g of amoxicillin given one hour before implant placement will significantly reduce implant failures. To give a more understandable meaning to the arid statistics, we can say that giving 2 g of amoxicillin to 25 patients may save one from experiencing an implant failure.

I wish to underline that the conclusions of both trials, despite providing similar results, were rather different. Any reader wishing to have a more critical approach to a scientific article should not passively accept the conclusions; after carefully reading the materials and methods and the results sections, the reader should draw his own conclusions. This also justifies why I am so keen on systematic reviews as a valuable tool to critically summarise the evidence (I wish to emphasise this for the sceptics of evidence-based practice).

So, should we give a single shot of prophylactic antibiotics to every patient undergoing implant placement? The answer is not as straightforward as you may think. I wish to focus your attention on two aspects.

1) Although the difference for implant failures was statistically significant and 420 patients were originally included in both trials, the difference could still be a 'spurious' result, i.e. produced by chance. To overcome this potential problem, additional large multicentre RCTs are needed.
2) The administration of 2 g of amoxicillin may induce important adverse events: a potentially fatal anaphylactic shock that is (fortunately) very rare therefore its incidence may not be quantified in RCTs, and the selection of antibiotic-resistant bacteria. I was not able to find reliable information of how much resistance can be induced by a single shot of 2 g amoxicillin, but the lack of evidence should not be erroneously confused with the lack of effect.

I wish you an enjoyable read.

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