

Clinical audit: a study to improve antibiotic prescribing

Can audit improve antibiotic prescribing in general dental practice? by N. A. O. Palmer, Y. M. Dailey and M. V. Martin
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Objective

To investigate whether clinical audit can improve general dental practitioners' prescribing of antibiotics.

Design

An intervention study carried out in general dental practice in the North West of England.

Method

Information was collected over an initial six-week period from 175 general dental practitioners on their current antibiotic prescribing practices. The information collected was the antibiotic prescribed including dose, frequency and duration, the clinically presenting signs and conditions, the medical history (if for prophylaxis), and any other reasons for prescribing. This was compared to the practitioners' antibiotic prescribing for a further six-week period following an audit, which included an educational component and the issuing of guidelines.

Results

During the initial period practitioners issued 2316 prescriptions for antibiotics. This was reduced by 42.5% to 1330 during the audit. The majority of the antibiotics (81%) for both periods were prescribed for therapeutic reasons. The most commonly

prescribed antibiotics were amoxycillin (57.6%), metronidazole (23.8%), penicillin (9.3%), erythromycin (4.8%) and a combination of amoxycillin and metronidazole (1.7%). The antibiotic regimens used by practitioners were significantly changed by the audit ($P < 0.001$) and there was a significant reduction in the number of prescriptions ($P < 0.05$) which did not conform to national guidelines.

Conclusions

The results from this investigation support the conclusion that clinical audit, with the issuing of guidelines and an educational component, can change prescribing practices leading to a more rational and appropriate use of antibiotics in general dental practice.

In Brief

- Audit can substantially improve GDP's antibiotic prescribing
- Audit with guidelines and an educational component improves antibiotic prescribing
- Guidelines are useful for setting standards in audit

Comment

This is a timely article reinforcing the links with clinical audit, continuing professional development and the on-going publication of clinical guidelines documents. There is also an increasing awareness of the rigour, which should be applied when prescribing antibiotics, not only in dental practice but also across the medical professions. That prescriptions issued by 176 dentists fell from 2,316 during 6-week period to 1,330 during a similar period at the end of the study shows the impact of education coupled with the provision of guidelines can have on the quality of patient care. It also questions the validity of their earlier practice. This paper reports an excellent example of increased awareness of relevant clinical guidelines enhancing clinical performance.

Clinical Audit in general dental practice under the GDS scheme has tended to look at structure and process aspects of practice with recurring audits concerning radiographs.¹ That something as critical to life as the use of antibiotic should be chosen to audit is laudable and the often-made assertion that the production of guidelines and educational initiatives will have an effect on clinical practice is supported by the findings.

A surprisingly large number of dentists, 175 out of the 932 invited to join agreed to

participate in the study. These dentists worked in groups of 8–10 as a collaborative audit with all the individuals and groups working to the same protocol. It could be described as a collaboration of collaborative audits. The data collection pro-forma was universal to all the groups. A pre-test period covering 6 weeks data collection was carried out and the results reviewed. These interim finding provided the agenda for a series of educational meetings in which the anomalies in prescribing were addressed and the FGDP *Guidelines on Anti-microbial Prescribing* introduced. It is not known whether some of the practitioners were aware of this publication before the initial data collection. Following the educational phase a similar period of data collection was carried out and the results analysed and subjected to statistical tests.

The findings that there was a reduction of 42.5% in antibiotic prescribing can be described as dramatic and the reduced risks to patients cannot be underestimated. However the paper also states that one medical condition, that of 'Murmur' (heart) attracted marked reduction of 51.7% in prescriptions issued after the education related to heart murmurs. Why this

should be is not stated but presumably dentists were contacting their patient's medical advisers and discussing the need for prophylactic cover for dental treatment.

That prescriptions had been issued for 'diagnostic purposes' and 'because of pressure of time' and 'patient expectations' is worrying but it is very encouraging to find that following education these had reduced significantly.

Anecdotally antibiotic prescribing is learnt at undergraduate level and later through colleagues and mentors in the early stages of practice. This paper should encourage all dentists to examine their own prescribing habits and compare them with current guidelines.

A positive introduction of clinical guidelines was shown to have benefit to patients. The authors and supporters of this work should be congratulated for the initiative and it should be a model for other areas of the country to follow.

1 Central Audit and Peer Review Panel data base of GDS Clinical Audits (unpublished data).

Malcolm Pendlebury

GDP, Dental Tutor, FGDP(UK)

Royal College of Surgeons of England