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Antibiotic prophylaxis of endocarditis: are NICE guidelines flawed?

To the editor

The current NICE guidance (1) on antibiotic prophylaxis for endocarditis (IE) chose to deviate from US and European guidelines (2,3). These, unlike NICE, continue to recommend antibiotics before high-risk dental procedures (e.g. extractions) in high-risk patients (principally those with replacement heart valves or previous IE).

An analysis using national data on inpatient hospital activity (4) showed no change to the long-standing and gradual increase in IE incidence two years after the introduction of the NICE guidelines. However antibiotic prophylaxis continued in about 25% falling to 20% during this period, possibly in those patients at high risk. In a new study from the same group (5) there was a further fall in antibiotic prophylaxis to about 10% of pre-NICE levels over a longer, 5 year follow-up. This study showed a statistically significant increase in the incidence of IE after the introduction of the NICE guidelines. The authors estimated that by March 2013 there were about 35 extra cases per month above those expected from pre-NICE incidence rates. The study was limited by using hospital codes rather than validated clinical diagnoses and, crucially, by a lack of information on microbiology. A causal link is only likely if there was an increase in IE caused specifically by oral bacteria. Otherwise other explanations are possible. The increase might reflect a parallel increase in infection on pacemakers, for which implantation rates rose slightly during this period (6). There could have been an increase in the number of IV drug users although there is no evidence for this. Access to adequate dental surveillance has declined over the period of the study (7,8). As is common with studies in IE as many questions are raised as answered, but these results should at least prompt a re-evaluation of the NICE position.

A number of studies suggest a link between dental procedures and IE predominantly in high-risk patients having high-risk procedures (9-14). The increased incidence in the recent study was shown in both low and high-risk patients but the classification was retrospective and potentially inaccurate. Although there is no randomised trial of antibiotic prophylaxis, a

number of observational clinical studies suggest a benefit in high-risk groups (12,15). Animal work shows that a single dose of amoxicillin can prevent streptococcal endocarditis caused by selected strains (16,17).

The British Heart Valve Society believes that a study prospectively exploring the link between dental procedures and IE should be conducted. A national endocarditis epidemiology, management and outcomes (NEEMO) database has been piloted to collect such data and we are seeking collaborators. If it were to identify a significant association then the case for a nationally funded RCT of antibiotic prophylaxis would be strong. If no association were found then the case for prophylaxis would be weakened.

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