Infective endocarditis following invasive dental procedures: IDEA case-crossover study

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Plain English summary

IDEA case-crossover study

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Plain English summary

Infective endocarditis is a life-threatening infection of the heart valves. Most people are at low risk of infective endocarditis. However, those with certain cardiac conditions are at moderate risk of infective endocarditis, and those with artificial or repaired heart valves, a history of infective endocarditis and certain congenital heart conditions are at high risk of infective endocarditis.

In around 40–45% of cases, oral bacteria are the cause of infective endocarditis. For many years, those people at moderate or high risk of infective endocarditis were given antibiotics (antibiotic prophylaxis) before invasive dental procedures such as extractions to reduce the risk of infective endocarditis. There is no good-quality evidence, however, to support the effectiveness of antibiotic prophylaxis, or the link between invasive dental procedures and infective endocarditis. Many believe that the oral bacteria that cause infective endocarditis are more likely to enter the blood during daily activities (e.g. toothbrushing, flossing or chewing), particularly in those with poor oral hygiene, than on the rare occasions when invasive dental procedures are performed.

The aim of this study was to link English NHS data on infective endocarditis-related hospital admissions and dental treatments to determine if infective endocarditis is more likely in the weeks immediately after an invasive dental procedure than at any other time.

When we linked the data sets and plotted the occurrence of different dental treatments over the year before infective endocarditis-related hospital admission, we detected a problem in the way that dental data were recorded. Unfortunately, there was a failure to collect dental procedure data when courses of treatment were incomplete. As one of the most common reasons for not completing a course of treatment was emergency admission to hospital, this meant that the number of dental procedures recorded decreased in the weeks before any emergency hospital admission. We have attempted to correct for this, but the data loss has affected the data quality. Although the data suggest an association between invasive dental procedures and infective endocarditis in individuals at high risk of infective endocarditis, the certainty of this association has been weakened.

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This report

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