

RESEARCH SUMMARY

Transmission of MRSA via dental operatory surfaces

Nosocomial transmission of methicillin-resistant *Staphylococcus aureus* via the surfaces of the dental operatory
H. Kurita, K. Kurashina and T. Honda *Br Dent J* 2006; 201: 297–300

Objective

We assess the possibility of methicillin-resistant *Staphylococcus aureus* (MRSA) transmission via the surfaces of the dental operatory.

Methods

A survey of MRSA contamination on the surfaces of the dental operatory, and an analysis of MRSA transmission via the dental operatory between patients was carried out in the department of special dental care and oral surgery.

Results

MRSA was observed on the surfaces of dental operatory including the air-water syringe and reclining chair. Nosocomial infection or colonisation of MRSA occurred in eight out of 140 consecutive patients who had no evidence of MRSA at admission. Antibiograms of 30 antibiotics revealed that the isolates from the eight patients were of the same strain as those from the surface of dental operatory. After treating the patients under a revised infection control (IC) protocol including a single use of barrier covers, MRSA was not detected on the surfaces of the dental operatory, and no nosocomial infection or colonisation occurred during hospitalisation (0/117 patients).

Conclusions

These results suggest that MRSA contaminates the surfaces of the dental operatory, and therefore the dental operatory should be considered a possible reservoir of MRSA.

COMMENT

Methicillin Resistant *Staphylococcus aureus* (MRSA) was first discovered in the UK in 1961 and is now widespread. It is responsible for many hospital acquired infections and many column inches in the popular press. It is estimated that MRSA is responsible for about 5000 deaths per year in the UK. At present in the UK the incidence of community acquired MRSA is still very low (only about 100 cases have been identified in the last three years) but it is more prevalent in the USA, mainland Europe and Australia.

MRSA has been isolated as a cause of oral infection in the UK but these cases have been associated with oral surgery in a hospital setting.¹ There is a risk that MRSA could be brought into the dental surgery environment in the upper respiratory tract, in particular the anterior nares, of patients who are colonised with this organism.

This study identified strains of MRSA on both the surface of an air-water syringe and the surface of a dental chair in a hospital dental unit. There were 8/140 patients treated in the unit identified as either having infection or nasal colonisation with MRSA that appeared to be the same strain. None of these patients had been identified as having MRSA before admission to the unit. As a result of these findings, the infection control protocols used in the unit were revised and the use of disposable barriers introduced. Members of staff were trained for one month in the use of the new protocols.

Following the introduction of the new infection control protocols there were no further isolates of MRSA from the surgery environment and no further cases of MRSA infection in 117 consecutive patients.

This paper highlights the importance of the use of appropriate infection control protocols in the prevention of health care associated infections. However, because of the very small number of environmental isolates of MRSA involved, the proof of cause and effect is not conclusive. It would have been helpful for the investigators to have screened members of staff for the carriage of MRSA as another potential source of this organism.

Cross infection remains a significant risk in the dental surgery environment and infection control protocols must be robust.

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1. Smith A J, Robertson D, Tang M K *et al.* *Staphylococcus aureus* in the oral cavity: a three-year retrospective analysis of clinical laboratory data. *Br Dent J* 2003; 195: 701–703.

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IN BRIEF

- Describes the possibility of cross contamination through the dental operatory.
- Describes the possibility of methicillin-resistant *Staphylococcus aureus* (MRSA) contamination on the surfaces of the dental operatory.
- Helps to consider adequate infection control (IC) guidelines and effective IC practices on the surfaces of the dental operatory.