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Risk factors for methicillin-resistant *Staphylococcus aureus* (MRSA) infection in a Japanese elderly care nursing home

To the Editor: I was pleased to see Fraise and co-workers' paper [1], which demonstrated that hospital admission within the last year was a risk factor for methicillin-resistant *Staphylococcus aureus* (MRSA) carriage. Their work supports our previous study [2]. In a nursing home in a major Japanese city, Fukuoka, bacterial cultures were performed in 55 out of 102 residents on the basis of clinical evidence of infection during the 3 fiscal years from April 1991 to March 1994. Ten residents were positive for MRSA while 45 residents were negative for MRSA but positive for non-MRSA bacterium. Forty-seven residents remained free of bacterial infection. Of the 102 residents sampled, the proportion hospitalized within 6 months prior to the bacterial culture was significantly greater in the MRSA group (70·0%) than in the non-MRSA group (17·7%) and the bacterial infection free group (10·6%), suggesting that hospitalization was a risk factor for MRSA infection among nursing home residents.

In the Fraise study, the use of antibiotics was not a risk factor for MRSA carriage.[1]. In contrast, in our study, the MRSA group residents received more antibiotics than the non-MRSA group ($1{\cdot}7 \pm 1{\cdot}2$ vs. $0{\cdot}3 \pm 0{\cdot}5$, $P < 0{\cdot}01$) [2]. In addition, none of the bacterial infection-free residents received any antibiotics. These findings suggest that exposure to antibiotics was a risk factor for MRSA infection.

Most experts have emphasized that third generation cephalosporins should be reserved for situations in which their unique capabilities are required in order to avoid the development of widespread resistance to them [3]. In Japan, the frequency of MRSA isolation has increased dramatically since 1982 when third generation cephalosporins were introduced [4]. In our study, the proportion of the residents who had received third generation cephalosporins during hospitalization was 57·1% in the MRSA group, 12·5% in the non-MRSA group and 0% in the bacterial infection free group [2]. Though the numbers of patients in each group are small, this result suggests that exposure to third generation cephalosporins might be a risk factor for MRSA infection. A recent case control study on MRSA infection in a Japanese geriatric hospital revealed that use of third generation cephalosporins (odds ratio = 3·12, 95% CI 2·16–4·50) as well as the use of antibiotics other than third generation cephalosporins (odds ratio = 1·73, 95% CI 1·20–2·50) was a risk factor for MRSA infection [5]. Unnecessary administration of antibiotics as well as unnecessary hospitalization are advisable when treating the elderly in nursing homes.

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REFERENCES

1. Fraise AP, Mitchell K, O'Brien SJ, Oldfield K, Wise R. Methicillin-resistant *Staphylococcus aureus* (MRSA) in nursing homes in a major UK city: an anonymised point prevalence survey. Epidemiol Infect 1997; **118**: 1–5.
2. Washio M, Nishisaka S, Kishikawa K, et al. Incidence of methicillin-resistance *Staphylococcus aureus* (MRSA) isolation in a skilled nursing home: a third report on the risk factors for the occurrence of MRSA infection in the elderly. J Epidemiol 1996; **6**: 69–73.
3. Reese RE, Betts RF. Handbook of antibiotics, 2nd edn. Little Brown, 1993.
4. Yamaguchi K, Ohno A. Consideration on MRSA infections in relation to modern chemotherapy. Nihon Rinsho 1992; **50**: 923–31.
5. Washio M, Mizoue T, Kajioka T, et al. Risk factors for methicillin-resistant *Staphylococcus aureus* (MRSA) infection in a Japanese geriatric hospital. Public Health 1997; **111**: 187–90.