

Antibiotic Sensitivity of *Propionibacterium acnes* Isolates from Patients with Acne Vulgaris in a Tertiary Dermatological Referral Centre in Singapore

H H Tan,**FAMS, MBBS, MRCP (UK)*, C L Goh,***FAMS, MD, FRCP (Edin)*, M G C Yeo,****FAMS, MBBS, FRCPA*, M L Tan,*****MSc*

Abstract

Objectives: To study the minimum inhibitory concentrations (MICs) of *Propionibacterium acnes* (*P. acnes*) isolates to selected antibiotics from patients with acne vulgaris in Singapore and determine if resistance increases with prolonged use of antibiotics. **Design:** A single-centre prospective study. **Setting:** Tertiary dermatological referral centre in Singapore. **Patients:** One hundred and fifty patients with acne vulgaris seen at the National Skin Centre. **Results:** In patients who had never been on antibiotics, there were no resistant isolates of *P. acnes*. In patients who had been on short-term antibiotics (between 6 to 18 weeks), there were 2 resistant strains among the 34 isolates (6.25%); in patients who had been on antibiotics for longer periods, there were 11 resistant strains among the 51 isolates (21.6%). The differences in the rates of isolation of resistant strains between patients who had not been on antibiotics to those that had been on long-term antibiotics were statistically significant ($P = 0.015$). There was also a significant difference in isolation of resistant strains from those on short-term antibiotics compared to those who had been on long-term antibiotics ($P = 0.036$). Resistance to erythromycin was most commonly encountered. Most of the erythromycin-resistant strains also showed cross-resistance to clindamycin. The average MICs to antibiotics such as minocycline, erythromycin and clindamycin in those on long-term antibiotics were significantly higher when compared to patients who had not been on antibiotics. **Conclusions:** Antibiotic resistance in *P. acnes* isolates in Singapore follows similar patterns to studies conducted in Europe. Resistance to erythromycin was most commonly seen, and this is associated with cross-resistance to clindamycin. Among the tetracycline group of drugs, the average MICs to tetracycline was higher than that for doxycycline, which in turn was higher than that for minocycline. Antibiotic resistance can occur with short-term antibiotic courses, and the rate of resistance increases as the duration of antibiotic consumption increases.

Ann Acad Med Singapore 2001; 30:22-5

Key words: Bacterial resistance, Erythromycin, Tetracycline

* Associate Consultant
** Director and Senior Consultant
National Skin Centre
*** Head and Senior Consultant
Diagnostic Bacteriology, Department of Pathology
**** Scientific Officer
Department of Pathology
Singapore General Hospital

Address for Reprints: Dr Tan Hiok Hee, National Skin Centre, 1 Mandalay Road, Singapore 308205. E-mail: hhtan@nsc.gov.sg