

HYPERHIDROSIS

## THE ROLE OF BACTERIAL DENSITY IN THE SEVERITY OF AXILLARY BROMHIDROSIS AND ITS RESPONSE TO ANTIPERSPIRANT APPLICATION

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**Introduction:** Bromhidrosis is characterized by offensive body odor that produces inconvenience to the surroundings. To our knowledge, no other study has compared bacterial density in mild and severe bromhidrosis. While costly and invasive therapies have been developed for most cases of bromhidrosis, antiperspirant which blocks the sweat glands is still considered the first-line therapy to treat bromhidrosis.

**Objective:** To assess the difference in bacterial density between clinical classes of bromhidrosis and to determine the effect of antiperspirant treatment in the bacterial density in severe bromhidrosis patients.

**Materials and Methods:** This observational study recruited a total of 40 patients, consisted of 38 females and 2 males from general population in Yogyakarta. Subjects were divided into two groups of mild and severe bromhidrosis. All patients underwent a washout period of 14 days using non-fragrance-non-medicated soap only. Bromhidrosis criteria were measured using Visual Analogue Score at the start and the end of the study. The axillary sample from each group was processed for aerobic bacterial culture. Culture result was measured as colony forming unit (CFU). One-time antiperspirant was applied to the included subjects. After 24 hours, the sample from the same side axilla was processed again for bacterial culture as comparison.

**Results:** Forty patients were analyzed with an average age of 33 (+/- 7.3) years old. The average number of bacterial colonies on subjects with severe bromhidrosis was significantly higher ( $2.96 \times 10^4/\text{cm}^2$  CFU) than the subject with mild bromhidrosis ( $0.67 \times 10^4/\text{cm}^2$  CFU), ( $p < 0.05$ ). The average number of pre-intervention bacterial colonies was significantly higher ( $3.47 \times 10^4/\text{cm}^2$  CFU) than the post-intervention ( $0.02 \times 10^4/\text{cm}^2$  CFU), ( $p < 0.05$ ).

**Conclusions:** Bacterial colonies in severe bromhidrosis are significantly denser than in mild bromhidrosis. It seems that the sweat production influence the bacterial colonies which lead



to the severity of odor. Future studies could benefit from identifying the role of specific bacteria in bromhidrosis.

