## PC-I-1. Clinical evaluation of horizontal ridge augmentation using guided bone regeneration

**Sang-Ho Ryu*, Jin-Woo Park, Jae-Mok Lee, Jo-Young Suh**
Department of Periodontology, School of Dentistry, Kyungpook National University

### Background

To expect a predictable long-term prognosis for dental implants, a sufficient volume of healthy jaw bone should be present at potential implant recipient sites. However, preoperative analysis often demonstrates localized bone defects in the alveolar process as a result of trauma or teeth extraction with advanced periodontal disease or periapical lesions. Thus, reconstructive surgery is needed for localized ridge augmentation if implants are to be used.

The surgical technique for localized ridge augmentation is based on the principle of guided bone regeneration(GBR) using barrier membranes. Evidence-based treatment results indicate that GBR for localized alveolar ridge deformities can effectively augment the ridge with new bone.

The objective of this study was to evaluate treatment outcome of GBR for the treatment of horizontal ridge deficiencies with simultaneous or staged implant placement.

### Materials and methods

Eleven patients(aged 23 to 56 years) requiring implant treatment with ridge augmentation were involved in this study. Simultaneous or staged approch was chosen as considering the implant positioning and primary stability. During ridge augmentation surgery with ePTFE or bioresorbable membranes and various graft materials including autogeneous bone, the width of the ridge was measured before grafting. Following a tension-free primary closure and a healing period of 6 months, the sites were re-entered for implant placement or healing abutment connection, and the crest width was re-assessed.

### Results

In all of eleven patients, a sufficient alveolar ridge width was obtained to allow implant placement. The mean alveolar ridge width prior to augmentation was

2.86±1.45mm. The mean alveolar ridge width at reentry was 7.27±0.41mm. A mean ridge width increase of 4.41±1.45mm was observed at the 6 month reentry.

## conclusion

The result of the study indicate that GBR technique is appropriate for horizontal ridge augmentation under the prerequisite of a complication-free healing.