Abstract
Fixed orthodontic appliance is an appliance that is fixed on teeth that cannot be opened by patients. Fixed orthodontic appliance may cause many oral complications due to the difficulties in maintaining good oral hygiene. Plaque is formed with the appliance of fixed orthodontic appliance which obstruct the maintaince of oral hygiene, by forming a new retention area for plaque and debris which directly increases the number of microbes. The aim of this study is to evaluate the correlation of patients with fixed orthodontic appliance with periodontal conditions in Dentistry Faculty (FKG), University of North Sumatera (USU). The type of study that was used is analytic observation with Cross-sectional design. Total sample in this study was 64 clinical patients from the clinic of Orthodontic and clinic of Periodontia Rumah Sakit Gigi dan Mulut (RSGM), FKG, USU were selected with accidental sampling technique. The sample consists of 32 patients which used fixed orthodontic appliance and another 32 patients which doesn’t use fixed orthodontic appliance. Clinical examinations on the samples was done using the Gingival Index, Oral Hygiene-Simplified Index (OHIS), Plaque Index, Papilla Bleeding Modified Index, Gingival Recession Index and Gingival Hyperplasia Index. The result of this research showed that the increase of the index was only in gingival hyperplasia index which is case group is higher than the control group. Based on research conducted can be concluded that there is no relationship between the use of fixed orthodontic appliances with periodontal conditions in patients but there is a statistically meaningful differences in the severity of hyperplasia of the gingiva between groups who wear fixed orthodontic appliance with the group who doesn’t wear orthodontic appliance.

Key words: fixed orthodontic appliance, periodontal condition, oral hygiene