

**1: DEPARTMENT OF PROSTHODONTICS SEMMELWEIS UNIVERSITY, HUNGARY,
 2: DEPARTMENT OF NEUROLOGY SEMMELWEIS UNIVERSITY, HUNGARY.**

Abstract

Introduction
 Objectives of this study was to test statistically, whether the patients with epilepsy did indeed have poorer oral health, oral hygiene and periodontal status as compared with the age and sex matched control group of general population (fig. 1).

Materials and methods
 Since epilepsy is a heterogeneous group of patients, we have set up a new classification system with four subgroups taking into account the type of seizures, frequency and mental state (table 1). We compared the subgroups of epilepsy patients with each other and control subjects. After history, the oral hygiene (Greene-Vermillion Oral Hygiene Index), the periodontal status (Periodontal Probing Depth, Periodontal Attachment Loss, Mühlemann Index, CPITN Index, gingival hyperplasia) and abrasion of the remaining teeth were examined. Statistical analysis was performed by SAS 8.2 for windows software.

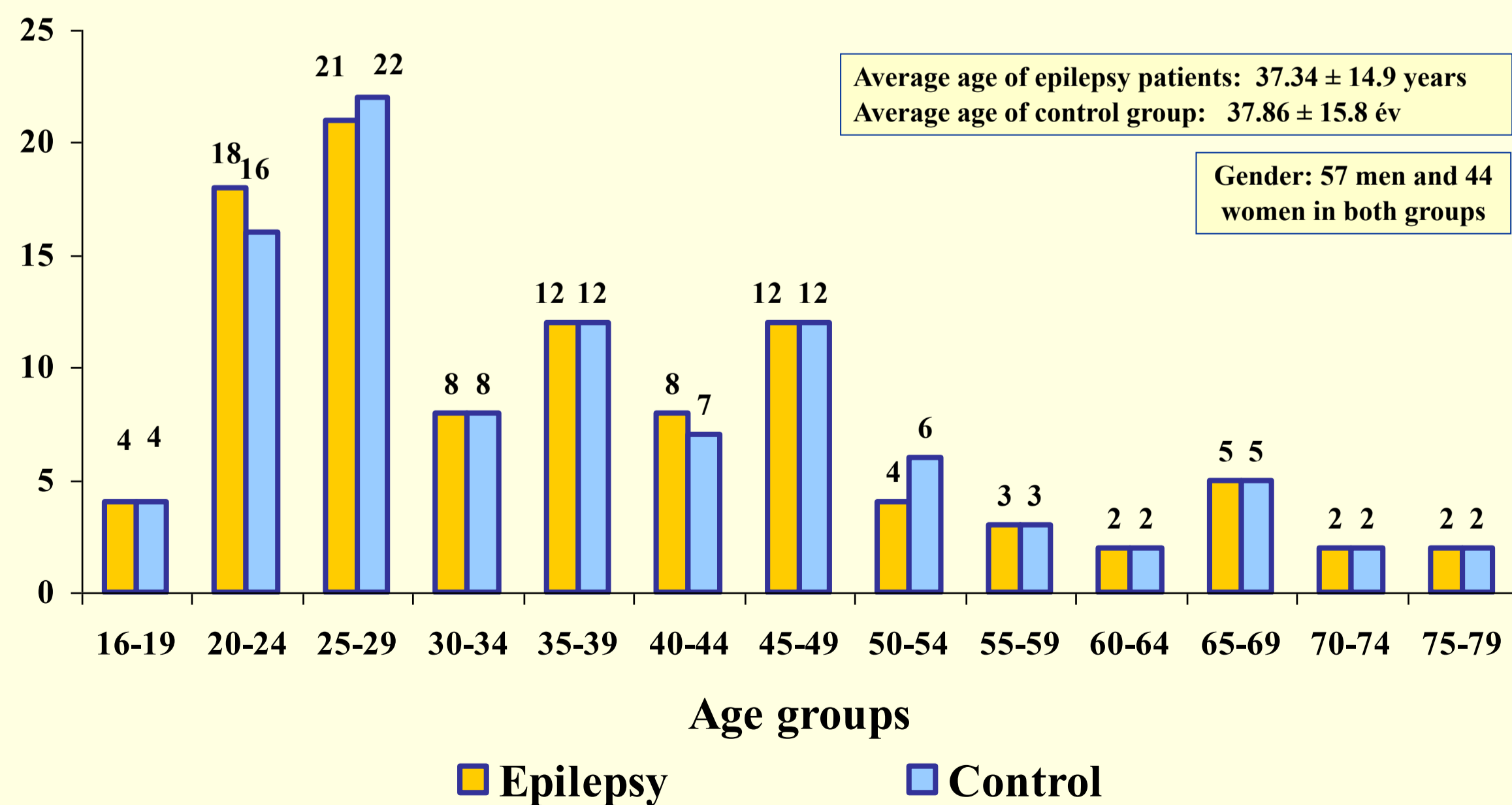
Results
 Oral Hygiene Index was "bad" in the patient (3,18±1,45) and "satisfactory" in the control (2,8±1,4) group (fig. 2 and 3). The Mühlemann index was higher (p<0,001) in patient group (fig. 4). The PAL was higher (p<0,008) in epilepsy group (fig. 5). Visiting a dentist more frequently resulted in better periodontal health in patient group: PPD (p=0,02), PAL (p=0,05), Bleeding (p=0,007). The PPD (p=0,025) and PAL (p=0,008) were more pronounced in patient group. The indices showed no difference between those epileptic patients, who were treated with carbamazepine or valproic acid: PPD (p=0,21), PAL (p=0,52), Bleeding (p=0,44). The CPITN Index showed no difference between the epilepsy (2,6±0,69), and the control group (2,4±0,76). The abrasion was higher (p=0,039) in patient group (fig. 6 and 7), and was depending on frequency of GM seizures (p=0,04).

Conclusion
 The increased Oral Hygiene Index, PPD, PAL, Bleeding are the consequences of the neglected oral hygiene in connection with worsening gnathic and mastic functions and lower frequency of visit to dentist. The increased exertion on teeth during seizures and significantly higher number of missing teeth might cause higher degree of abrasion in epilepsy patients. Phenytoin hypertrophy was not observed because modern drugs are more popular. In clinical practice we use MK1-Riegel attachment for periodontal prevention (fig. 8).

Table 1. Classification system of epilepsy patients

Criteria of entrance	
Group I	Patients who have been seizure free for years, either with or without medication Patients with rare seizures (less often than once a year) Patients exclusively with seizures that do not involve the masticatory apparatus (absence, myoclonus and certain partial seizures)
Group II	Patients with frequent partial seizures involving the masticatory apparatus, such that are accompanied by clonisation of facial and masticatory muscles or oral automatisms (e.g. grinding of teeth). Generalised tonic-clonic seizures, if present, appear less often than once a year
Group III	Patients with frequent generalised tonic-clonic seizures (more often than once a year)
Group IV	Patients with mental disability, excluding compliance during dental treatment

Fig. 1. Age diagram



The average age of the patient and control group did not differ significantly (p=0.8)

Fig. 2. Plaque Index

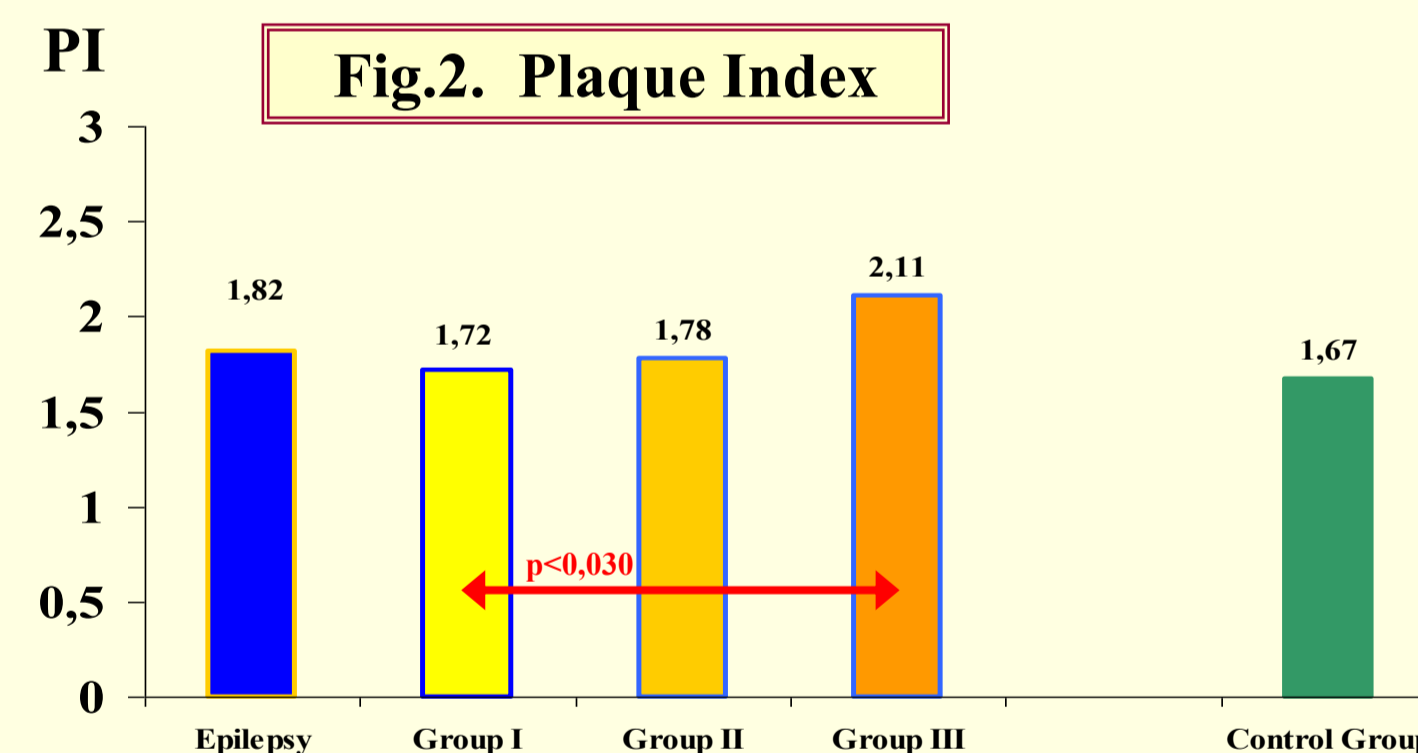
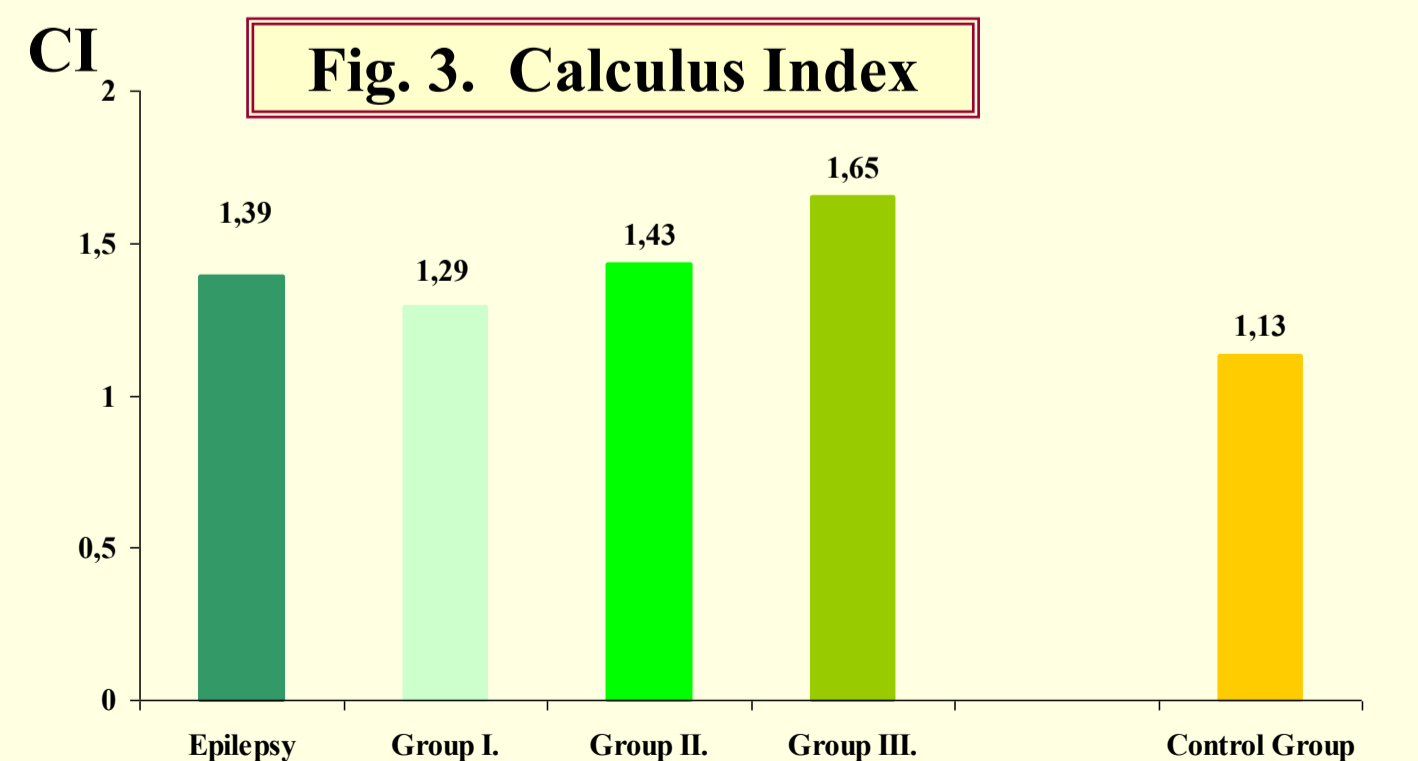


Fig. 3. Calculus Index



Greene-Vermillion Oral Hygiene Index was „bad” in the patient group (3,2 ± 1,4) and „satisfactory” in the control group (2,8 ± 1,4).

Fig. 4: Mühlemann Index

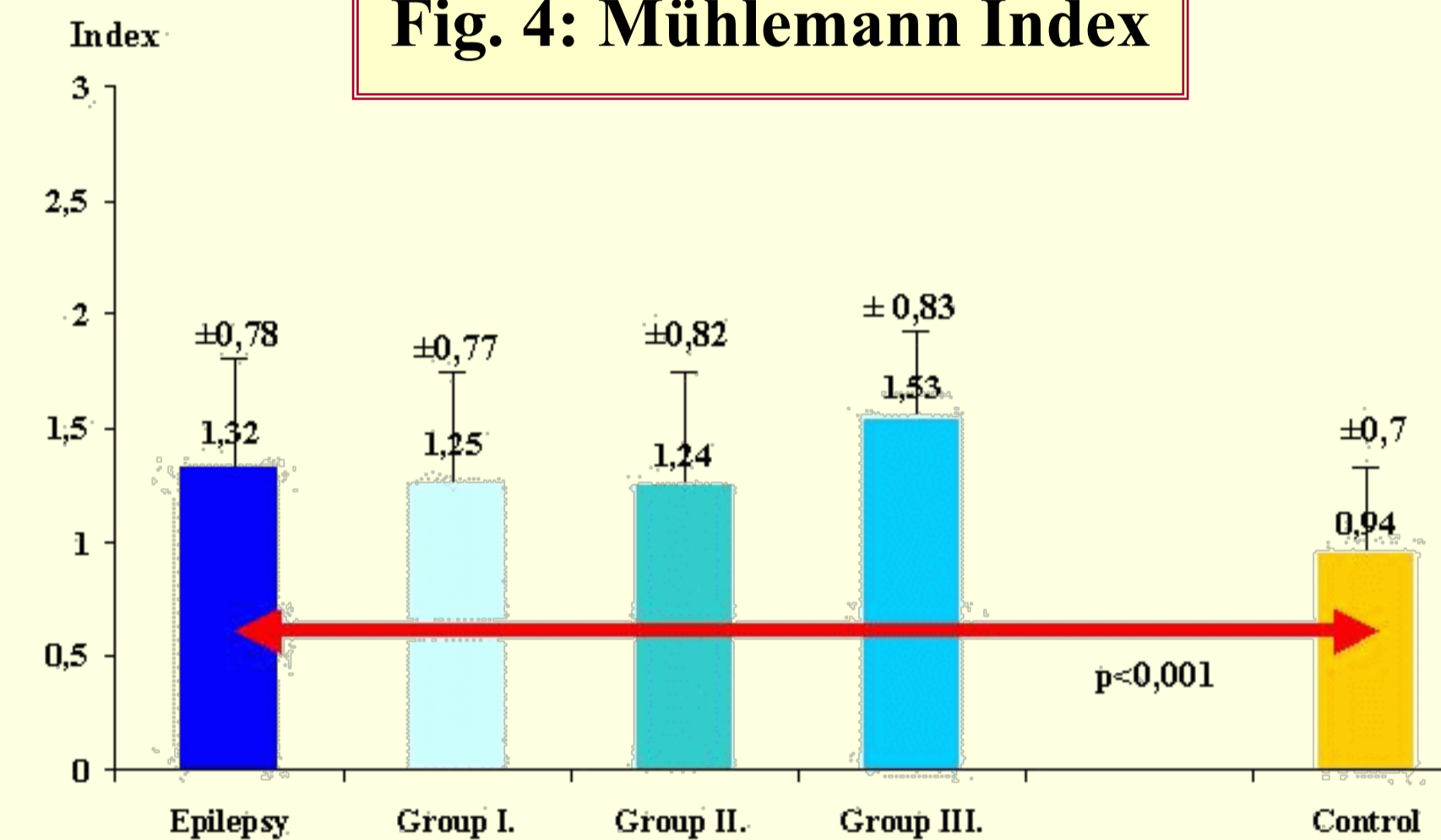


Fig. 5: Periodontal Attachment Loss (PAL)

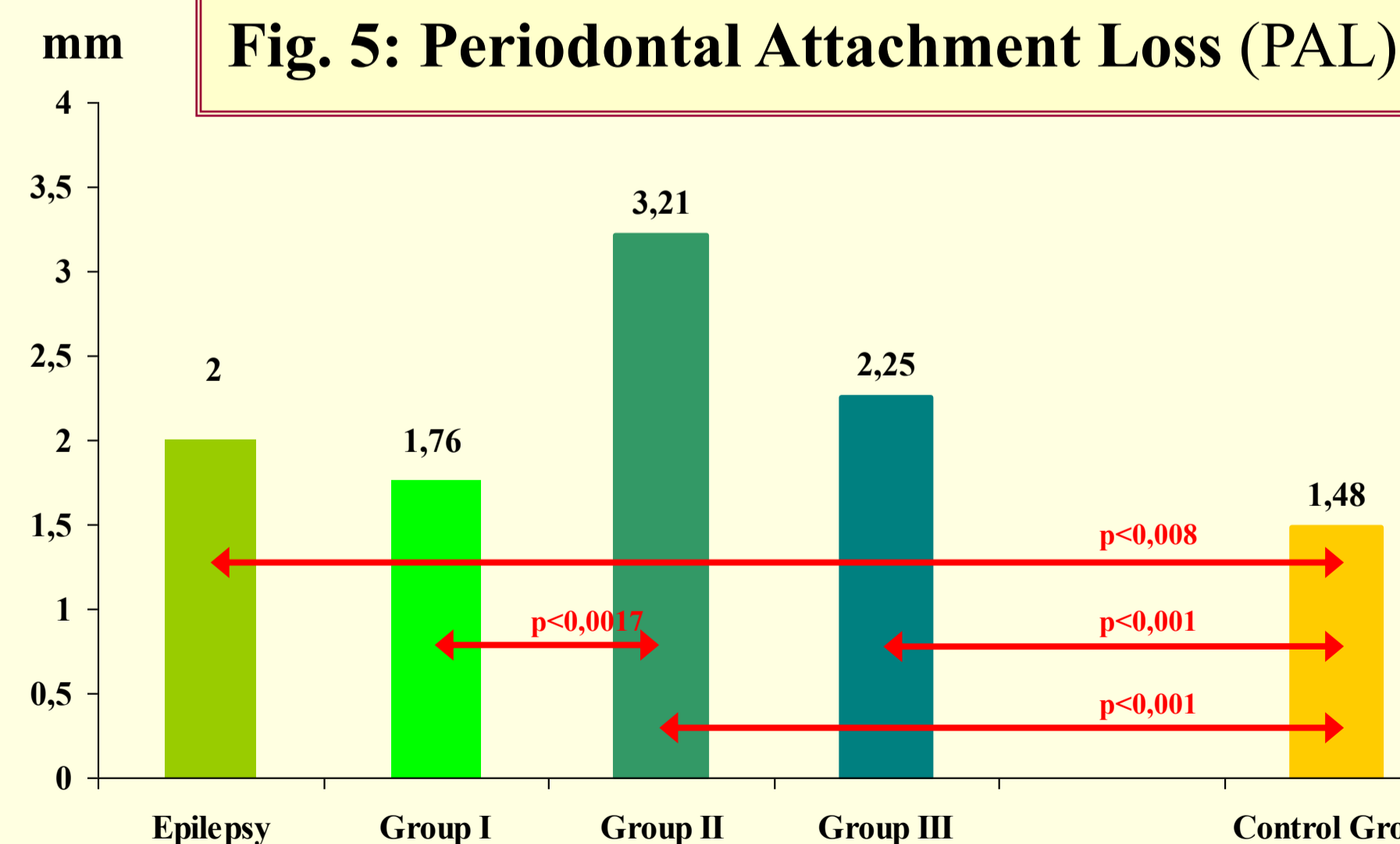


Fig. 6: Tooth Attrition of the Upper Dental Arch

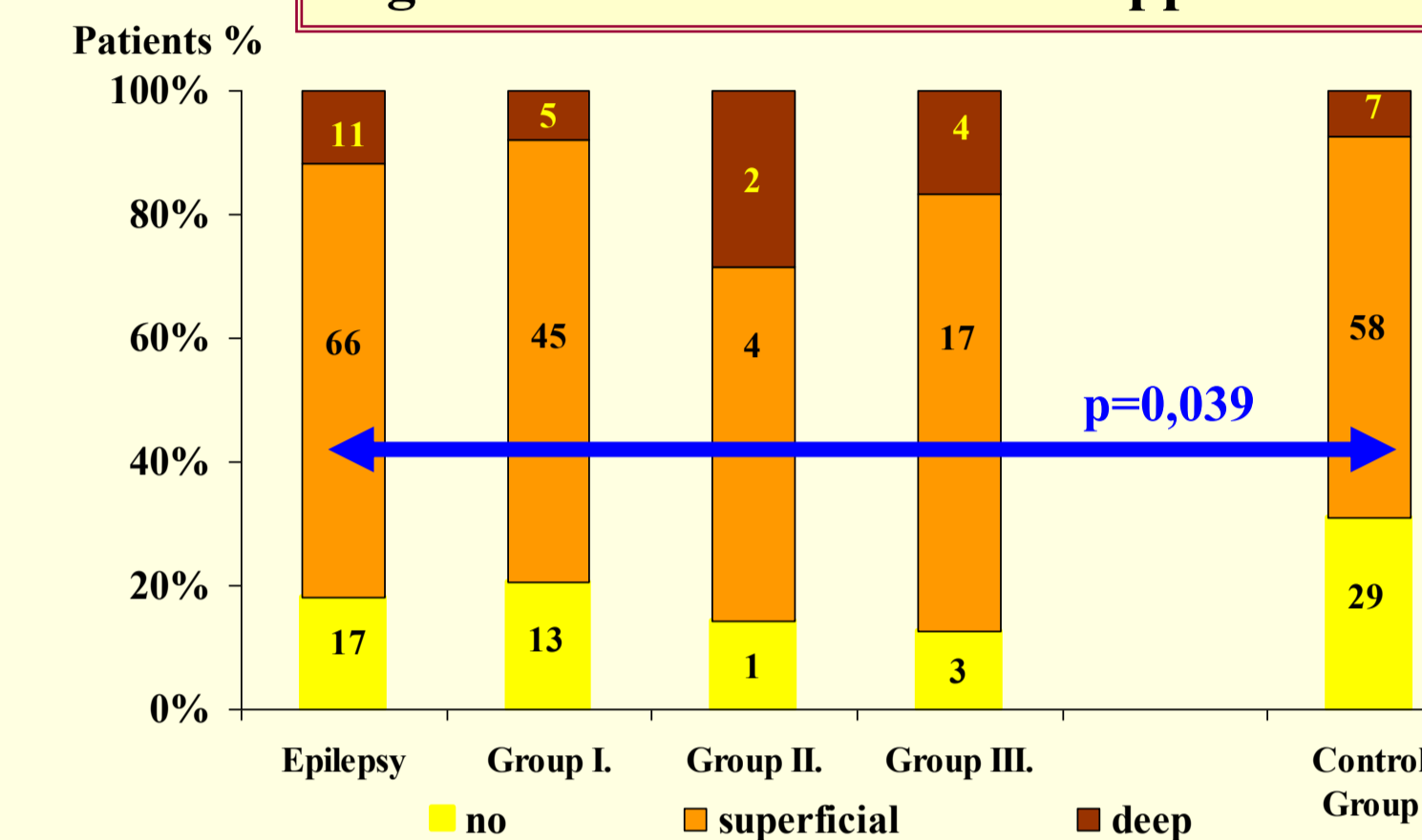
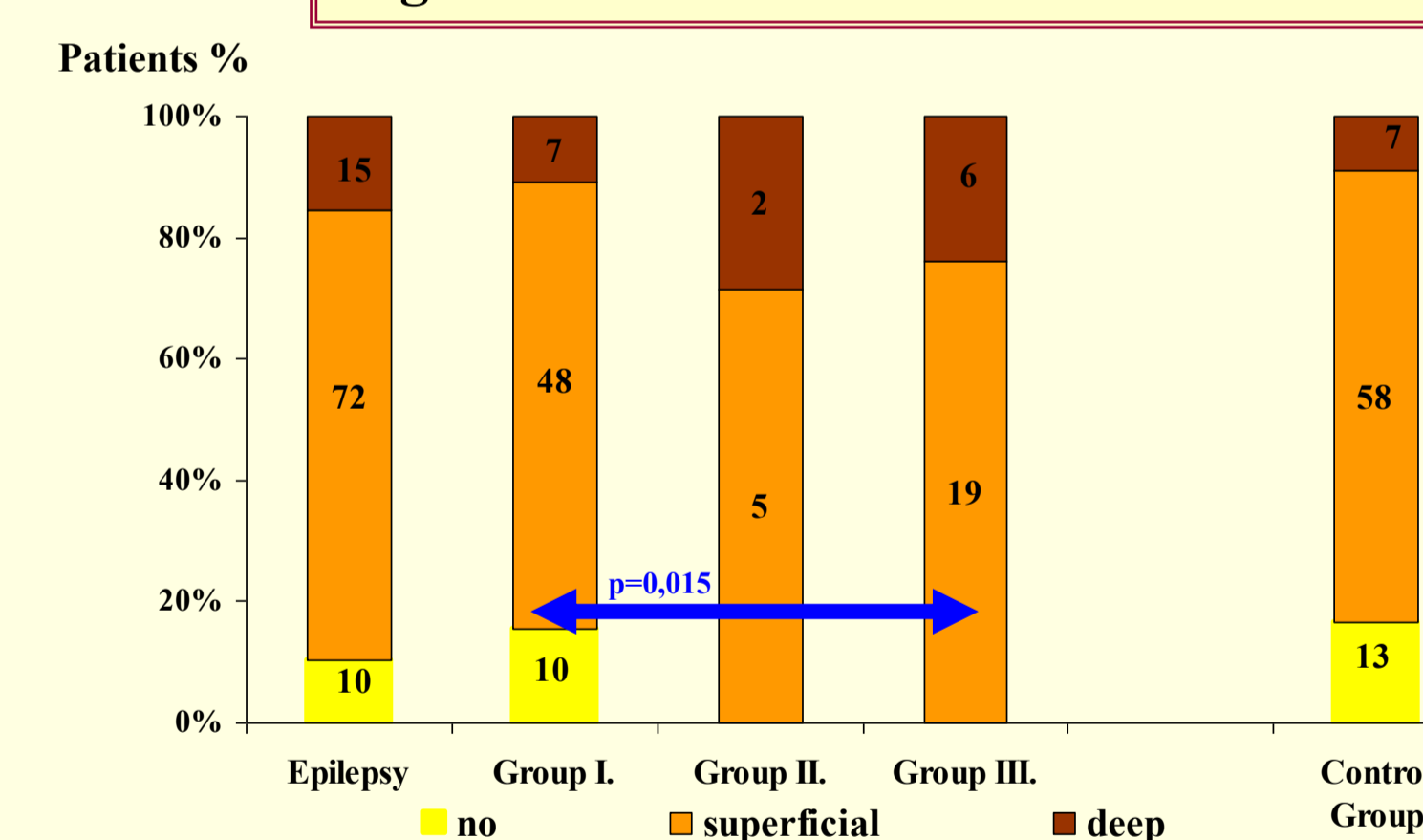


Fig. 7: Tooth Attrition of the Lower Dental Arch



Attrition was depending on frequency of GM seizures (p=0,04).



Fig. 8:
 The attachment used for periodontal prevention