An investigation of the oral health status of a group of children with
congenital heart disease at Benghazi paediatric hospital
Fowzya M Ali *, Rasmia Huew*, Fatihya Mohamed **Khadija Herwis***
Paediatric and Preventive Department * and Orthodontic Department ** Faculty of Dentistry,
University of Benghazi, Benghazi / Libya

Key words: Congenital heart disease, Gingivitis, gingival extent and gingival severity indices
(GEE&GS), Caries experience (dmft & DMFT)

The aim: this study was aimed to investigate the oral health status of a group of children with
congenital heart disease attending (out-patient) or admitted (in-patient) in the cardiology
department at Benghazi children’s hospital for cardiac investigations and treatments.

Materials and Methods: Seventy children with congenital heart disease (mean age of 7.2) were
included in the study. The samples were further subdivided into 3 age groups (29 children in the
younger age <6yrs old, mixed dentition 6-12 yrs old n=29) and older group >12 yrs old n= 12).
Non-invasive procedures to examine their periodontal health and caries experience. Both the
extent and the degree of severity of gingivitis were assessed in the incisor area of the maxilla
and the incisor and canine area of the mandible was assessed in the anterior teeth by using
extent of gingivitis (E6) and gingivitis severity (GS) indices. The individual gingival units (papillae
(P), Margins (M) and attached gingiva (A) were assessed for the presence of inflammation
based on visual examinations. Probing of the gingiva was not carried out, as these children were
considered to be at risk of developing infective endocarditis. The extent of inflammation was
measured by scoring the colour change of the most severe gingival unit in both the upper and
lower index teeth and forming a mean for both jaws. The caries experience were assessed by
using dmft for deciduous teeth and DMFT for permanent teeth as modified by Palmer et al.
(1984)

Results: previous cardiac surgery was present in 19 children, 30 cases had a single cardiac defect
while the others suffered complex cardiac defects, 7 cases of cyanosis,6 children with Down’s
syndrome, 2 children with William disease, one child had Marfan syndrome and three cases
presented with recent infective endocarditis without back history of dental procedures within
the study group. E6&GS were increasing with age (p<0.001). Healthy gingivae were found in
5.7% cases and 94.3% suffered different degrees of gingival inflammation. Untreated carious
lesions were present in 43% cases of the study group and was age related (p<0.001). The caries
experience in permanent teeth DMFT (meanStd.) was 0.27±0.760 in deciduous teeth dmft
was 7.22±4.53 and was significantly increased in both the mixed dentition and the older age
groups (p<0.001).

Conclusion: there has been more untreated caries and more pronounced gingival
inflammations of various degrees due to lack of proper dental care that prompts the importance
of eliminating the oral cavity as a source of infections.