

Validity and Reproducibility of ICDAS II in Primary Teeth

Type:

Article

Abstract:

The aim of this in vitro study was to assess the validity and reproducibility of the ICDAS II (International Caries Detection and Assessment System) criteria in primary teeth. Three trained examiners independently examined 112 extracted primary molars, ranging from clinically sound to cavitated, set up in groups of 4 to mimic their anatomical positions. The most advanced caries on the occlusal and approximal surfaces was recorded. Subsequently the teeth were serially sectioned and histological validation was undertaken using the Downer and Ekstrand-Ricketts-Kidd (ERK) scoring systems. For occlusal surfaces at the D(1)/ERK(1) threshold, the mean specificity was 90.0%, with a sensitivity of 75.4%. For approximal surfaces, the specificity and sensitivity were 85.4 and 66.4%, respectively. For occlusal surfaces at ICDAS code ≥ 3 (ERK(3) threshold), the mean specificity and sensitivity were 87.0 and 78.1%, respectively. For approximal surfaces, the equivalent values were 90.6 and 75.3%. At the D(3) threshold for occlusal surfaces, the mean specificity and sensitivity were 92.8 and 63.1%, and for approximal surfaces 94.2 and 58.3%, respectively. Mean intraexaminer reproducibility (Cohen's kappa) ranged from 0.78 to 0.81 at the ICDAS code ≥ 1 cut-off and at the ICDAS code ≥ 3 cut-off from 0.74 to 0.76. Interexaminer reproducibility was lower, ranging from 0.68 to 0.70 at the ICDAS code ≥ 1 cut-off and from 0.66 to 0.73 at the ICDAS code ≥ 3 cut-off. In conclusion, the validity and reproducibility of the ICDAS II criteria were acceptable when applied to primary molar teeth. Copyright (C) 2009 S. Karger AG, Basel

Author	<ul style="list-style-type: none">• Shoaib, L.• Deery, C.• Ricketts, D. N. J.• Nugent, Z. J.
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