

QUANTITATIVE ANALYSIS OF TOOTH LOSS DUE TO CARIES USING AI ENABLED SOFTWARE

INTRODUCTION

Assessing extent of dental caries - vital in treatment planning



Visual-tactile



Radiograph



Software

The International Caries Detection and Assessment System II (ICDAS II) Scoring System

To detect and assess dental caries



AIM

To determine Vol. of tooth loss due to caries & compare with ICDAS II Scoring system using AI enabled Software

METHODOLOGY

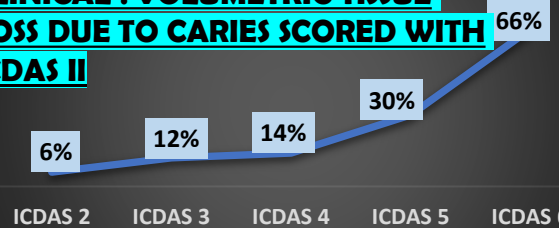
Sample Size Estimation

N=27

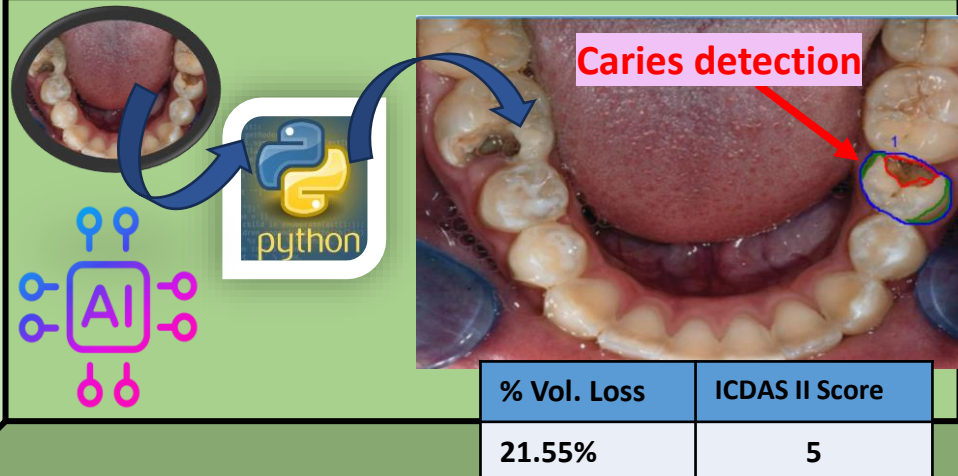
Premolar
Molar



CLINICAL : VOLUMETRIC TISSUE LOSS DUE TO CARIES SCORED WITH ICDAS II



SOFTWARE: % VOLUME LOSS & ICDAS II SCORE



Clinical & Software ICDAS II SCORE comparison



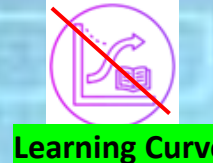
Highlight



Auto detection



Multi caries



Learning Curve



Report

Statistical Analysis	Value
Kappa	0.83
Cramer's V	0.85
Spearman	0.91

RESULTS

Clinical and Software ICDAS II Scores

"Almost perfect agreement" / Very Strong



DISCUSSION

- Volumetric Caries analysis - more accurate assessment of extent of caries
- Software more consistent, reliable and more accurate than clinical assessment

Limitations

- Manual Contouring of target tooth
- One image at a time
- 2D Images

CONCLUSION

Volume based caries assessment, enhanced with AI Enabled Software, aids better treatment planning



FUTURE

UPDATE

