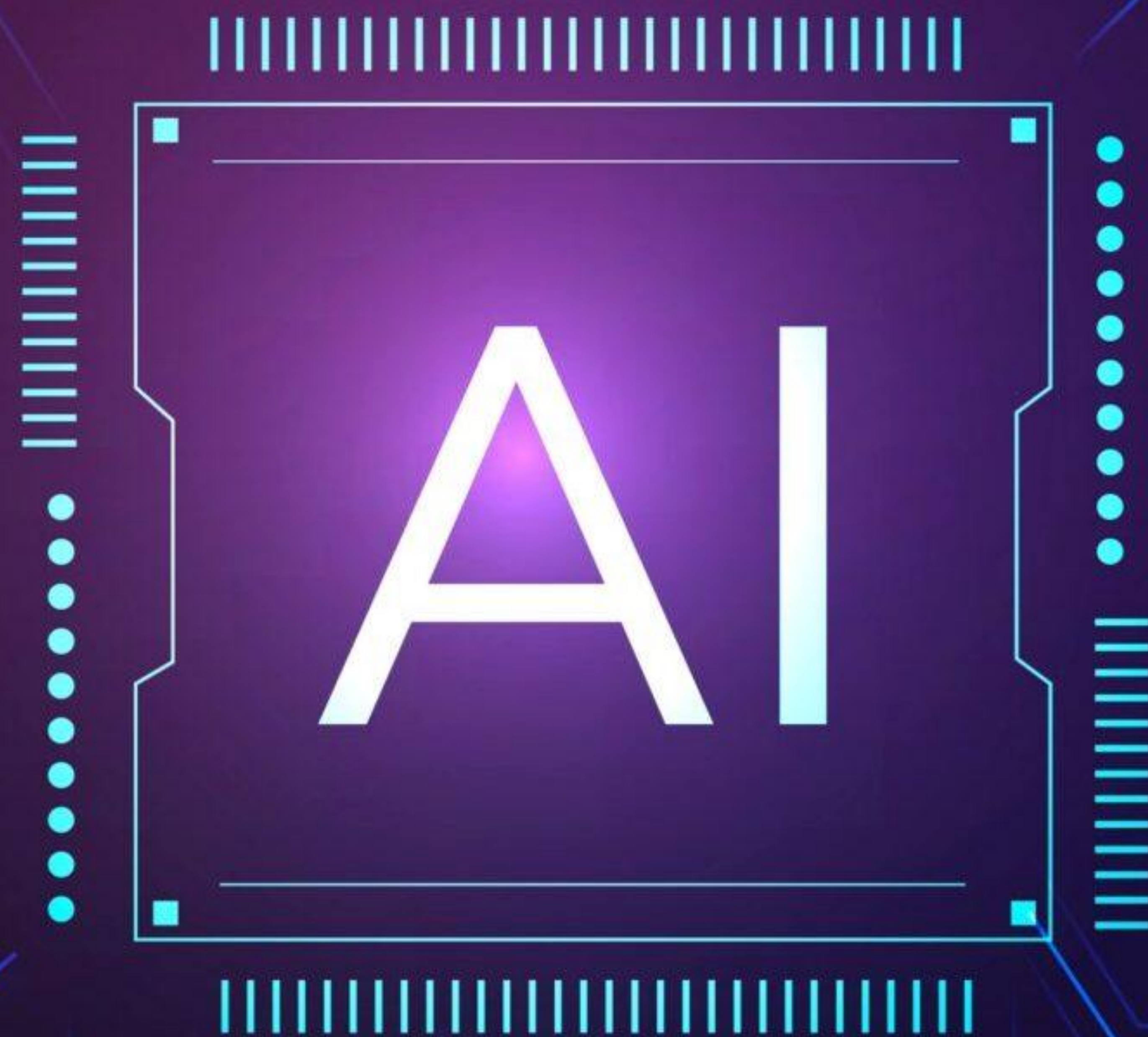
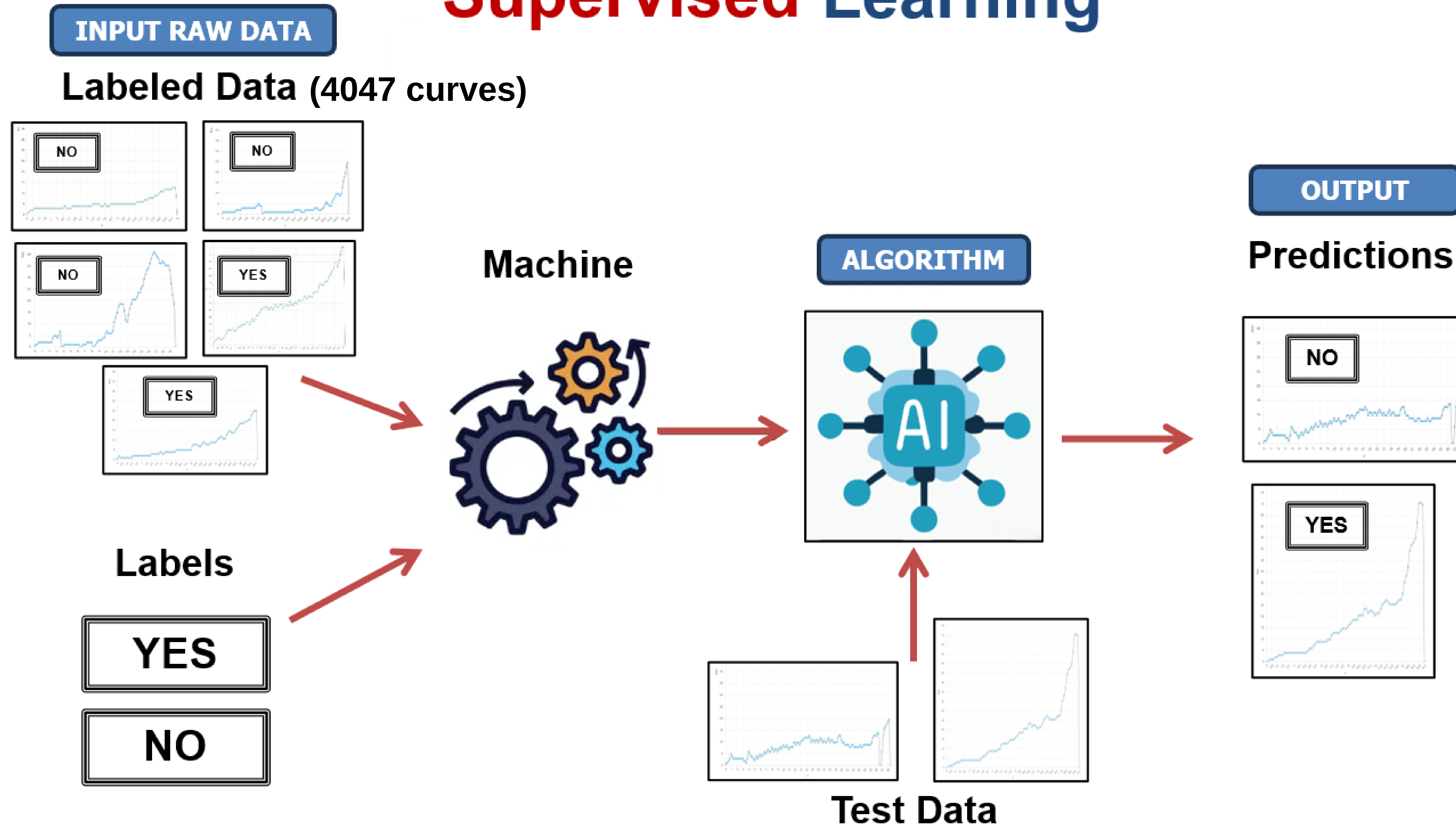


Degidi M., Daprile G.* The use of an artificial intelligence-driven novel tool for the evaluation of dental implants primary stability and immediate loading feasibility: a multicentric clinical study.



Supervised Learning



Purpose: The aim of this study is to evaluate the correspondence between prediction of an Artificial Intelligence driven new tool (AIT) and the clinician's evaluation in the immediate loading suitability of curves recorded during implant insertion in an multicentric clinical study.

M&M: During the period between September 2022 and August 2023, **11 operators**, after the placement of all their scheduled implants, were asked to classify the recorded insertion curves as suitable or non-suitable for immediate loading as presumed to be immediately loaded by a single non splinted crown. **Next**, the same curves were analyzed by the AIT that classified them as belonging to YES (suitable for immediate loading) or NO (non-suitable for immediate loading) class.

Results

- 1,924 dental implants were placed and a total of 21 different implant systems were used.
- The correspondence between surgeons and AIT evaluation (sensitivity) was 92,93% (1788 implants).
- 6,8% (171 implants) false-negative (AIT no; doctor yes)
- 1,1% (31 implants) false-positive (AIT yes; doctor no)

Conclusions and clinical relevance

The results seem to confirm that the Artificial Intelligence driven new tool presents a **high level of accuracy** in the prediction of immediate loading suitability of insertion curves examined.

AIT can be a **useful aid** for the clinicians in immediate loading decision regardless of implant system used and clinical situation treated