

Understanding Risk

Why Risk is Important



Understanding the risk of disease is increasingly recognized as a critical component to appropriate treatment planning. The reason for this can be easily illustrated.

If you only consider patients' current clinical conditions and their histories, three patients with the same conditions and histories might appear to need the same treatment plans. However, when you add the patients' individual risk that a current clinical status will deteriorate, suddenly it is clear that patients at different levels of risk need different treatment plans even when their current disease status and histories are identical. In other words, without an assessment of risk, you really cannot develop an optimum, or even an appropriate treatment plan for a patient.

Risk is Hard to Determine from Subjective Judgments

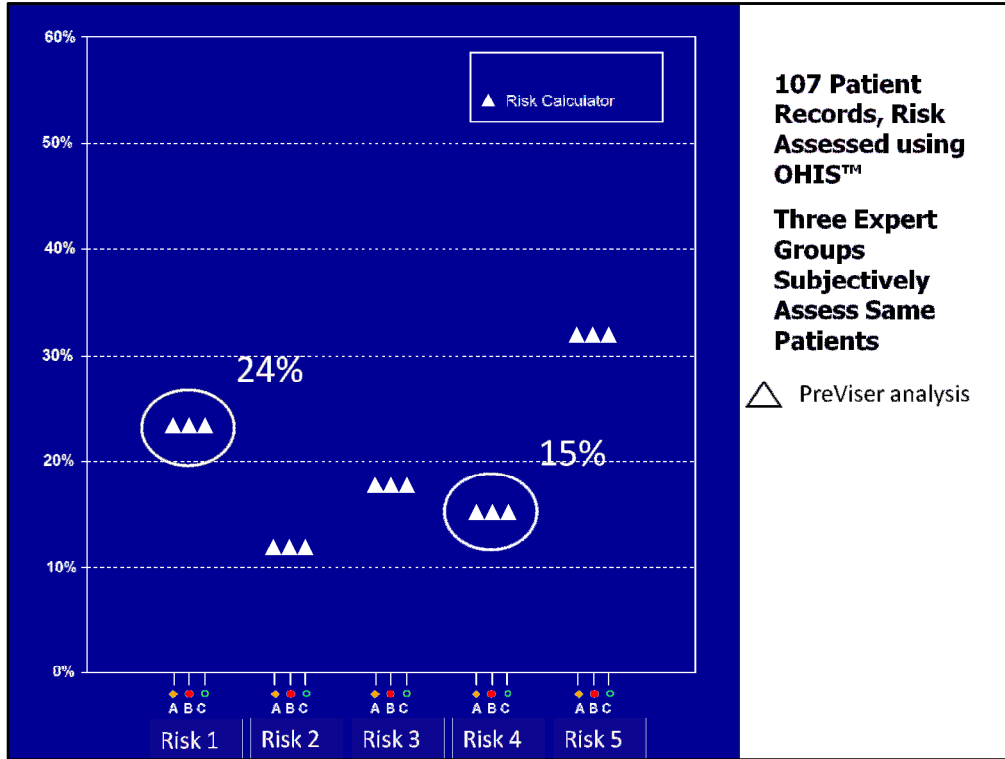
- Journal of the American Dental Association. Volume 134, May 2003. Pages 575 – 582.
- *Assessing periodontal disease risk: A comparison of clinicians' assessment versus a computerized tool*

It's easy to see that risk is important to understand, but how good are we at subjectively judging risk? A study was conducted at the University of Washington to help answer this question.

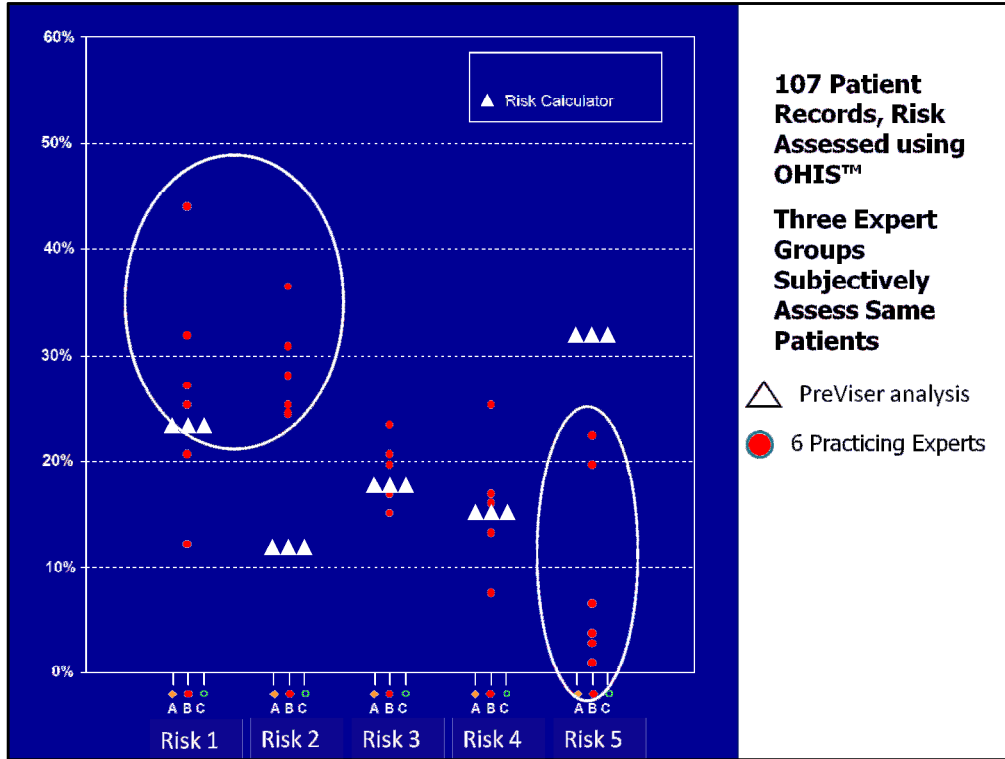
The Study

- A group of 107 subjects was assembled to manifest a wide range of risk, and a periodontal examination performed
- Based on the records, a risk score from 1 - 5 was determined by the PreViser's analytic software
- The records were evaluated individually by one group of 10 periodontists, another group of 6 periodontists and a group of 36 general dentists, and a risk score assigned for each subject
- Expert scores were compared statistically to the PreViser assigned risk scores

107 patients were examined by a panel of experts that included two groups of practicing periodontists, including some of the clinical founders of PreViser, and one group of general dentists with active hygiene practices. The clinician's were asked to put each patient into one of five risk categories from risk 1 for very low risk to risk 5 for very high risk. The patients were then analyzed using PreViser software and a comparison between the clinician's subjective risk assessment and the clinically validated PreViser analytic software was prepared.

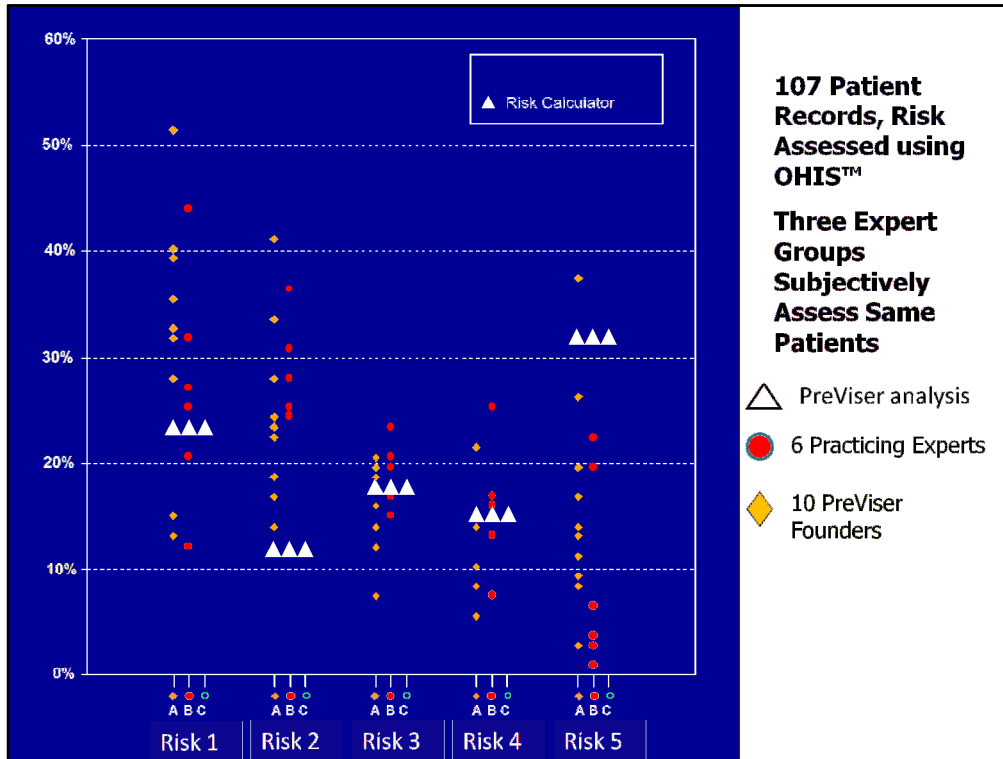


The population of patients was analyzed by PreViser, and based on that analysis, a percentage of the population was assigned to each one of the 5 PreViser risk levels. 24% of the patients were found to be very low risk level 1, 15% to high risk level 4 and so on. Next, the 6 practicing periodontists, which included past presidents of the AAP were asked to organize the same patients by risk level.

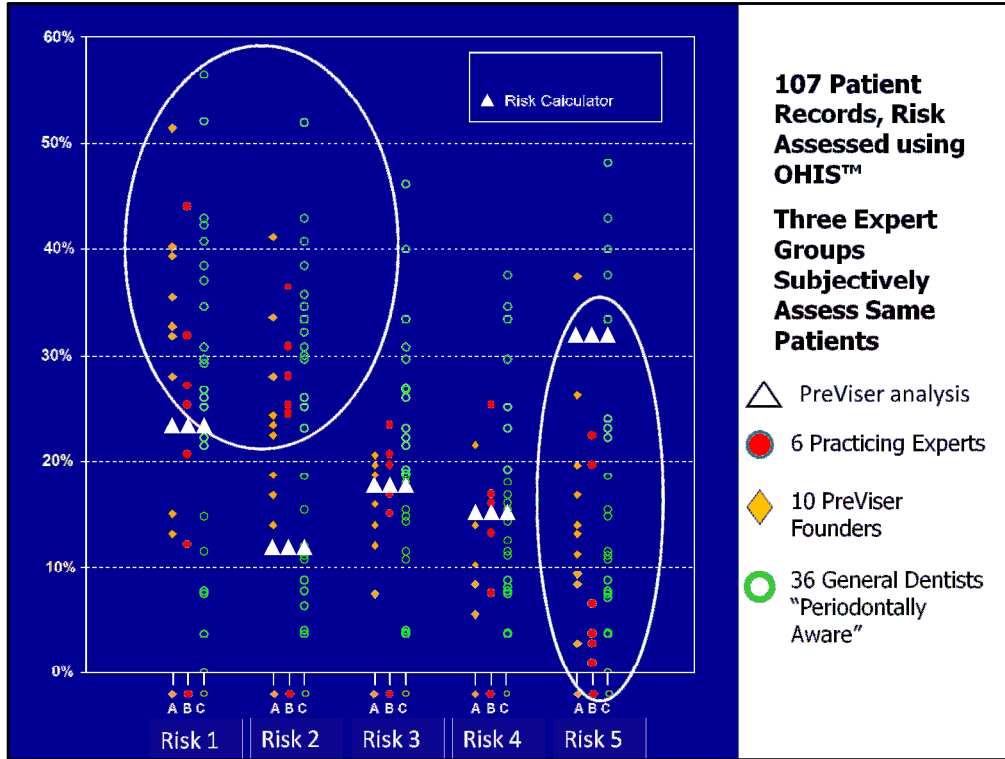


As you can see, the level of agreement between these experts and the clinically validated PreViser analysis was not very strong. The tendency was to put too few patients at very high risk, and too many at very low or low risk. In other words, the experts were underestimating the true risk levels of the patients examined.

Next, the PreViser founders were asked to perform the same categorization of patients by risk. It was assumed that since these periodontists were instrumental in developing the periodontal risk assessment software, that they should be particularly adept at getting the right answer.



Unfortunately, it did not turn out that way. As you can see, the PreViser founders made the same mistake the first group of expert periodontists made – they underestimated the risk of the patients examined. Finally, the group of periodontally aware general dentists were asked to perform the same task – that is, to assign the 107 patients into one of 5 risk categories based on their examination of the patient records.



The same pattern emerged, only with a wider spread of responses than even existed with the periodontists. As before, risk tended to be under-estimated, which in a practical sense means that many patients who are assessed subjectively by clinicians will receive less intensive care than their individual risk levels warrant.

Conclusions

- There is great variation among practitioners in assessing risk
- Probability of an expert clinician assigning given patient a “correct” risk score is small
- Relative to the PreViser system, dentists and periodontists underestimate risk , especially for patients in the higher risk groups

The conclusion of the study was straight forward. It is very hard to use subjective judgment to accurately determine patient risk. PreViser offers the clinician a simple, easy to use and objective approach to analyzing disease risk amongst patients. With these scores, we can help ensure that all patients receive the care they need! Thank you!