Visual field changes in diabetic patients: frequency doubling perimetry versus standard automated perimetry

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Purpose:
To compare visual field changes obtained by Frequency Doubling Perimetry (FDP) to those obtained by Standard Automated Perimetry (SAP) in diabetic patients.

Setting:
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Methods:
Twenty diabetic patients with no clinically visible diabetic retinal changes had their visual fields tested using both FDP and SAP and the results were compared. Their mean age was 48 years (ranging from 42 to 54 years old). Mean best corrected visual acuity was 6/9 (ranging from 6/6 to 6/18).

Results:
All twenty patients (100%) showed significant depression of the mean deviation (MD) and pattern standard deviation (PSD) with FDP with an average MD of -5.73DB and PSD of -4.39DB. However only 40% of those showed significant changes on the SAP with an average MD of -1.87DB and PSD of -2.28DB. The severity of these changes did not show any correlation with the duration or the type of diabetes.

Conclusion:
Frequency doubled perimetry appeared to be much more sensitive in detecting visual field changes in diabetic patients than the standard automated perimetry. Future follow up of these patients will delineate its predictive value for diabetic retinopathy.

Take-home message:
FDP can identify early visual field changes in diabetic patients with normal fundus.