Case report 2

Case history

The studied patient is a man, 56 years old, with type 2 diabetes, former smoker, with low lipid levels with a statin, and, till now, no complications. How should his cardiovascular risk be considered?

Visit 1

You see at your outpatient clinic a male patient of 56 years, known with type 2 diabetes since 4 years. He smoked till 2 years ago, for 40 years; his father had a heart attack at 50 years; he has non-proliferative diabetic retinopathy, and no signs of other complications. His current medication consists of Metformin 500 mg twice daily and Rosuvastatin 20 mg, all once daily. You started the Rosuvastatin at his last visit, he had not been using other lipid lowering drugs before. At physical examination he is overweight with a BMI of 28 kg/m2. His blood pressure is 136/88 mmHg, with a regular pulse of 68/min; otherwise physical examination is normal, with normal peripheral pulsations and intact sensibility. Fasting laboratory examination reveals:

Previous visit	*Visit 1*
HbA1c 7.6 %, 60mmol/mol	HbA1c 7.8 %, 62 mmol/mol
Total cholesterol 6.5 mmol/l	Total cholesterol 3.4 mmol/l
HDL 1.0 mmol/l	HDL 1.1 mmol/l
LDL cholesterol 4.1 mmol/l,	LDL-cholesterol 1.8 mmo/l
Triglycerides 2.1 mmol/l.	Triglycerides 2.6 mmol/l.

UKPDS risk engine: calculated 10-years risk of fatal CV disease is 7.2 %.

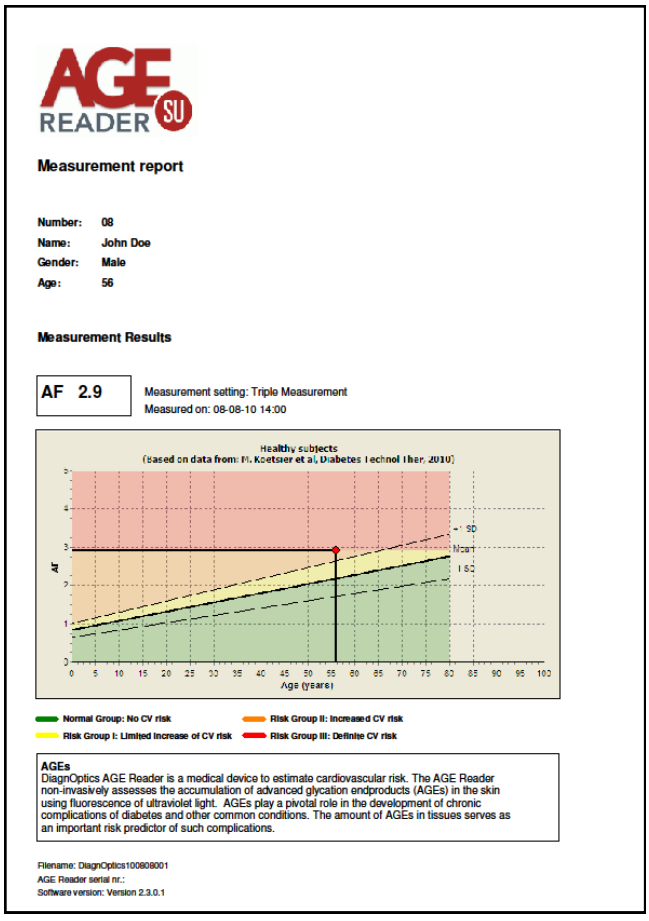
↳ ***No need to intensify treatment***

However, you doubt whether this is his 'real' cardiovascular risk because he has been exposed to higher levels of risk factors (smoking, lipid levels) up till recently, and the score does not take his overweight and positive family history into account. If you for example assume him to be still smoking and with the previously found cholesterol levels his risk would be about 19%.

You decide to increase the Metformin dose to 1 gram twice daily in an attempt to lower his HbA1c. However, you ask yourself if you should intensify his cardiovascular preventive treatment, by for example starting an ACE-inhibitor and Acetylsalicylic acid.

<u>You also perform an AGE Reader measurement</u>

The measurement result is AF: 2.9. The patient is classified in the high risk class, as is shown in the report



AGE READER SU

Measurement report

Number: 08
Name: John Doe
Gender: Male
Age: 56

Measurement Results

AF 2.9

Measurement setting: Triple Measurement
Measured on: 08-08-10 14:00

AGEs
DiagnOptics AGE Reader is a medical device to estimate cardiovascular risk. The AGE Reader non-invasively assesses the accumulation of advanced glycation endproducts (AGEs) in the skin using fluorescence of ultraviolet light. AGEs play a pivotal role in the development of chronic complications of diabetes and other common conditions. The amount of AGEs in tissues serves as an important risk predictor of such complications.

Filename: DiagnOptics100808001
AGE Reader serial nr.:
Software version: Version 2.3.0.1

Discussion

The UKPDS risk engine and other risk scores become less reliable and useful when recently important changes in the levels of risk factors have occurred. Risk classification may then be improved by using damage markers (IMT or coronary artery classification) (expensive and not always available), or by choosing other additive risk predictors. The AGE Reader measurement (AF value) is such a marker with additive predictive value.

It has been shown that type 2 diabetes patients with an AF value above the median of 2.75 have (for a similar UKPDS risk) an approximately 66% higher (CV) mortality rate than those with an AF value below 2.75. In your patient this would imply that his 10-years risk would rise from 7.2% to levels of 12%, this is above the level for which intensification of treatment is advised. You now decide to start an ACE inhibitor and acetylsalicylic acid.

If the AF value would have been 2.4, no treatment intensification would have been necessary.

Conclusion

The high AGE Reader measurement supports adapting treatment in this patient with marked recent changes in other risk factors.

Summary

The high AGE Reader measurement justifies intensifying cardiovascular preventive treatment.