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Optical coherence tomography (OCT) for neovascular age-related macular degeneration as well as diabetic retinopathy with macular oedema[1]

Extract

[1] Translation of the key statement of the final report D15-01 *Optische Kohärenztomografie bei neovaskulärer altersbedingter Makuladegeneration sowie beim Makulaödem im Rahmen der diabetischen Retinopathie* (Version 1.1; Status: 7 July 2017). Please note: This document was translated by an external translator and is provided as a service by IQWiG to English-language readers. However, solely the German original text is absolutely authoritative and legally binding.

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This report was prepared in collaboration with external experts.

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Key statement

Research question

The aim of this report is to

- assess the benefit of optical coherence tomography (OCT) in comparison with other diagnostic methods (including no diagnostics)
  - at initial diagnosis (start of treatment) (research objective 1) and
  - for treatment guidance in case of intravitreal injection of antagonists of vascular endothelial growth factors (VEGF inhibitors) and steroids (in diabetic macular oedema [DMO]) (research objective 2),
- assess the benefit of various OCT application strategies to guide treatment with intravitreal injections in comparison with each other (research objective 3)

each for patients with neovascular age-related macular degeneration (nAMD) and DMO with regard to patient-relevant outcomes.

Conclusion

Research objective 1

The benefit or harm of OCT in the initial diagnostics of nAMD and DMO in comparison with other diagnostic methods is unclear because no study was found on this topic.

Research objective 2

Data from 4 studies on nAMD and 2 studies on DMO were suitable for use.

nAMD: Comparison of OCT-guided intravitreal injections versus monthly treatment

For the outcome visual acuity, there was no hint of benefit or harm for patients with previous nAMD treatment; for patients without previous nAMD treatment, there was an indication of lesser benefit of OCT-guided intravitreal injections compared to monthly treatment. Regarding pain, foreign body sensation, adverse events, and health related quality of life, there was no hint of benefit or harm for treatment guidance in patients without previous nAMD treatment. No data were available on this topic for patients with previous nAMD treatment. In terms of intervention-related and disease-related costs, there was proof of an effect in favour of OCT-guided intravitreal injections for patients without previous treatment and an indication of an effect in favour of OCT-guided intravitreal injections for patients with previous treatment.

nAMD: Comparison of visual acuity + OCT-guided treatment versus visual acuity-guided treatment

For visual acuity plus OCT-guided treatment, there was a hint of harm for the outcome adverse events when compared to treatment guidance using visual acuity alone in patients without previous nAMD treatment. No hints of benefit or harm were found for vision, pain, and health-related quality of life. No data were available on the outcome foreign body sensation. Regarding

intervention-related and disease-related costs, there was no hint of an effect in favour or to the disadvantage of the combined use of OCT and visual acuity.

DMO: OCT-guided treatment versus fixed-interval treatment with VEGF inhibitors

Under an OCT-guided treat-and-extend regimen, there were no hints of benefit or harm compared to fixed-interval treatment for the reported outcomes visual acuity and adverse events. No data were available for the outcomes pain, foreign body sensation, and health-related quality of life. For intervention-related and disease-related costs, there was a hint of an effect in favour of OCT-guidance.

DMO: OCT-guided treatment versus fixed-interval treatment with corticosteroids

Under OCT-guided pro re nata treatment, there were no hints of benefit or harm for the reported outcomes visual acuity, adverse events, and health-related quality of life when compared to fixed-interval treatment in steroid-naïve patients. No data were available regarding pain and foreign body sensation. Regarding intervention-related and disease-related costs, there was a hint of an effect in favour of OCT-guidance.

Research objective 3

Three studies on nAMD were found. Since there was no hint of benefit of OCT-guided treatment, no comparison of different OCT application strategies was conducted.

Summary overview

In the overall assessment of all outcomes, the benefit and harm of OCT in initial diagnostics and treatment guidance are questionable. In patients with nAMD, the benefit of intravitreal injection may be lower under OCT-guided treatment.

The full report (German version) is published under
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