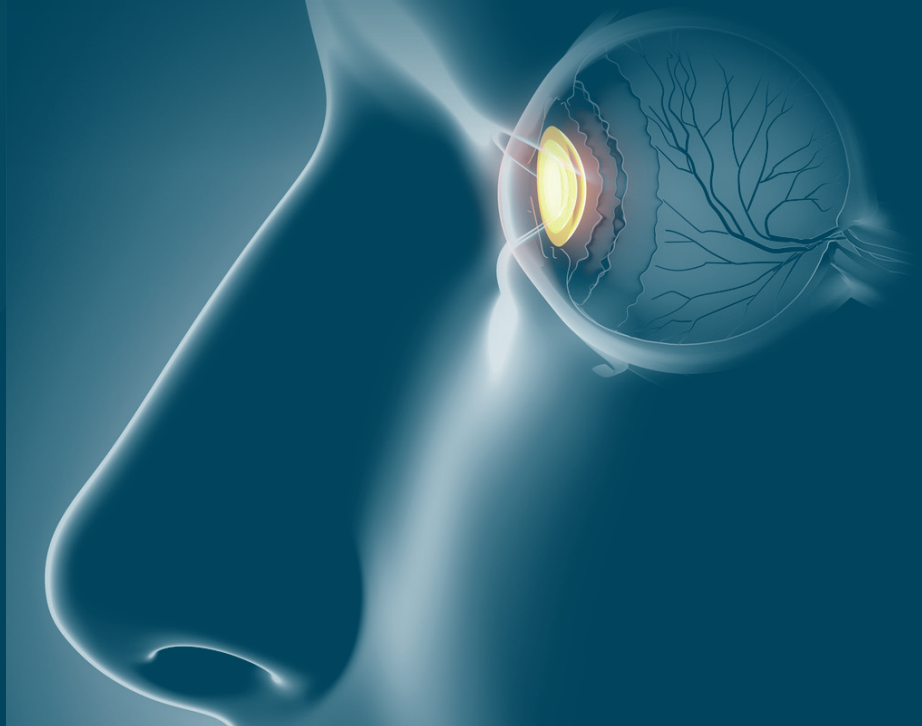
INNOVATIONS IN OPHTHALMOLOGY

SEPTEMBER, 07, 2013, 8:30 – 10:00 AM, KURHAUS BADEN-BADEN

Chairperson: Albert J. Augustin, Karlsruhe, Germany



SEPTEMBER 05–07

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WELCOME

Welcome to this interesting meeting on hot topics of new technologies and drugs in ophthalmology. This meeting which is addressed to ophthalmologists and also interested scientists, will offer a very stimulating overview of new and emerging possibilities in our specialty.

OCRIPLASMIN

A new drug to replace invasive surgery in selected cases

Anat Loewenstein, Tel Aviv

Ocriplasmin: A new injectable treatment for resolving vitreomacular traction promises to help a significant number of patients avoid surgery. Vitreomacular adhesion (VMA) is a common finding in older eyes. The vitreous is largely composed of collagen and hyaluronic acid and has a jelly-like consistency. In younger people, it is completely attached to the surface of the retina, most strongly at the optic nerve, ora serrata, around blood vessels, and in the central retina around the macula. With age, however, the vitreous slowly liquefies and cleanly separates from the retina in a process called posterior vitreous detachment. In most people, a posterior vitreous detachment is uneventful and results in a clean separation of the vitreous; but in some cases the liquefaction and separation are uneven, and the result is traction on the retina at the remaining points of attachment. In the periphery of the retina this can result in a retinal tear. When the macula is involved, the vitreous pulling at the points of adhesion is called vitreomacular traction (VMT). In many cases VMT produces symptoms, including bright flashes, decreased visual acuity and optical distortion. In the worst cases, a full-thickness tear in the fovea – a macular hole – can occur. This new treatment option will be presented.

FEMTOPHAKO

A new technology to perform cataract surgery – When will it be Standard of Care?

Gerd U. Auffahrth, Heidelberg

Femtosecond laser assisted cataract surgery has been one of the hottest topics in ophthalmology for the past few years, but is this just hype? This technology optimizes the critical steps of cataract surgery (cataract incision, capsulotomy, and nucleus disassembly). It creates accurate, reproducible, and customized corneal and lenticular incisions, facilitating the subsequent intraocular steps of cataract surgery. Femtosecond laser devices could make cataract surgery safer and less challenging, particularly in difficult cases (i.e. pseudoexfoliation, phacodonesis, ectopia lentis, and mature cataracts). All advantages and possible drawbacks will be critically evaluated.

AFLIBERCEPT

A potent design molecule or just another anti-VEGF drug?

Paolo Lanzetta, Undine

Aflibercept is a recombinant fusion protein consisting of portions of human VEGF receptor 1 and 2 extracellular domains fused to the Fc portion of human IgG1. Aflibercept is produced in Chinese hamster ovary (CHO) K1 cells by recombinant DNA technology. Aflibercept acts as a soluble decoy receptor that binds VEGF-A and PlGF with higher affinity than their natural receptors, and thereby can inhibit the binding and activation of these cognate VEGF receptors. Vascular endothelial growth factor-A (VEGF-A) and placental growth factor (PlGF) are members of the VEGF family of angiogenic factors that can act as potent mitogenic, chemotactic, and vascular permeability factors for endothelial cells. VEGF acts via two receptor tyrosine kinases; VEGFR-1 and VEGFR-2, present on the surface of endothelial cells. PlGF binds only to VEGFR-1, which is also present on the surface of leucocytes. Excessive activation of these receptors by VEGF-A can result in pathological neovascularisation and excessive vascular permeability. PlGF can synergize with VEGF-A in these processes, and is also known to promote leucocyte infiltration and vascular inflammation. Wet AMD is characterized by pathological choroidal neovascularisation (CNV). Leakage of blood and fluid from CNV may cause retinal thickening or oedema and/or sub-/intra-retinal haemorrhage, resulting in loss of visual acuity. In patients treated with Eylea (one injection per month for three consecutive months, followed by one injection every 2 months), retinal thickness decreased soon after treatment initiation, and the mean CNV lesion size was reduced, consistent with the results seen with ranibizumab 0.5 mg every month. In the VIEW1 study there were mean decreases in retinal thickness on optical coherence tomography (OCT) (-130 and -129 microns at week 52 for the Eylea 2 mg every two months and ranibizumab 0.5 mg every month study groups, respectively). Also at the 52 week time point, in the VIEW2 study there were mean decreases in retinal thickness on OCT (-149 and -139 microns for the Eylea 2 mg every two months and ranibizumab 0.5 mg every month study groups, respectively).

The symposium will be a success because of you. Thank you for supporting 'Innovations of Ophthalmology'.

Bayer Vital GmbH supports the symposium 'Innovations in Ophthalmology' with an amount of EUR 5.000,- net.

THE VALUE OF OCT

For non-Ophthalmologists

Gisele Soubrane, Paris

Optical coherence tomography (OCT) is an emerging imaging technology with applications in biology, medicine, and materials investigations. Attractive features include high cellular-level resolution, real-time acquisition rates, and spectroscopic feature extraction in a compact non-invasive instrument. OCTcan perform ''optical biopsies'' of tissue, producing images approaching the resolution of histology without having to resect and histologically process tissue specimens for characterization and diagnosis. Ophthalmology was the first clinical application for OCT, and subsequently, OCT has become well established in our specialty. In this presentation the advantages of the OCT-technology for other specialties such as neurology will be discussed in detail.

ARTIFICIAL VISION USING ARGUS II

What are we able to provide for our patients?

Vera Schmit-Eilenberger and Albert Augustin, Karlsruhe

A visual prosthesis, often referred to as a bionic eye, is an experimental visual device intended to restore functional vision in those suffering from partial or total blindness. Many devices have been developed, usually modeled on the cochlear implant or bionic ear devices, a type of neural prosthesis in use since the mid-1980s. The Argus II Retinal Prosthesis System ("Argus II") is the world's first approved device intended to restore some functional vision for people suffering from blindness. Argus II is approved for use in the United States (FDA) and European Economic Area (CE Mark) and is available in some European countries, with several more to be added. By implanting a device on the retina that receives a signal from the eyeglass-mounted camera, those cells can be stimulated as if receiving light, causing them to transmit an image to the brain. Due to the limited number of electrodes, patients would only be able to discern light or dark, but most have reported better functionality with the device - being able to make out the shape of a curb while walking, or discerning between light, grey or dark colored socks, for instance.

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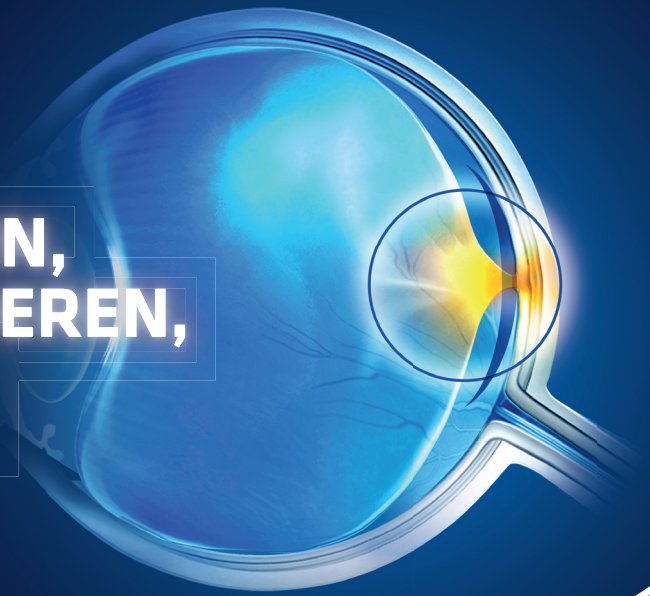

JETREA® – die erste medikamentöse Therapie bei vitreomakulärer Traktion (VMT), auch in Zusammenhang mit einem Makulaloch ≤ 400 µm bei Erwachsenen[1]

- 1x Injektion[1]
- Zum Lösen der VMT[2,3]
- Gut charakterisiertes Sicherheitsprofil[1]

JETREA®
(Ociplasmin)
0,5 mg/0,2 ml Konzentrat zur Herstellung einer Injektionslösung

1 Fachinformation JETREA®, März 2013. **2** Stalmans P, Benz MS, Gandorfer A, Kampik A, et al. Enzymatic vitreolysis with ocriplasmin for vitreomacular traction and macular hole. N Engl J Med. 2012; 367: 606–615. **3** Data on file. OCT Scans. ThromboGenics, Inc., 2012.

JETREA® 0,5 mg / 0,2 ml Konzentrat zur Herstellung einer Injektionslösung, **Wirkstoff:** Ocriplasmin; verschreibungspflichtig **Zusammensetzung:** Eine Durchstechflasche enth.: 0,5 mg Ocriplasmin in 0,2 ml Lösung (Konzentrat). *Nach der Verdünnung* mit 0,2 ml Kochsalzlösung enthalten 0,1 ml der verdünnten Lösung 0,125 mg Ocriplasmin. *Hilfsstoffe:* Mannitol (Ph.Eur.), Citronensäure, Natriumhydroxid (zur pH-Wert-Einstellung) und Wasser für Injektionszwecke. **Indikation:** Zur Behandlung der vitreomakulären Traktion (VMT) bei Erwachsenen, auch i. Zusammenhang m. einem Makulaloch ≤ 400 µm Durchmesser. **Gegenanzeigen:** Überempfindlichkeit gegen den Wirkstoff oder einen der Hilfsstoffe. Bestehende okulare od. periokulare Infektionen od. bei Verdacht darauf. **Anwendungsbeschränkung:** Nur intravitreale Injektion, unter asept. Bedingungen, mit anschließ. Überwachung d. Pat. auf NW. *Nicht empfohlen:* gleichzeit. Behandlung beider Augen, wiederholte Anwendung am selben Auge, Pat. m. großen Makulalöchern (> 400 µm), bei starker Myopie (sphärische Korrektur > 8 Dpt. oder axiale Länge > 28 mm), Aphakie, zurückliegender rhegmatogener Netzhautablösung, instabilen Zonulafasern, kürzlich durchgeführter Augen-OP bzw. intraokularer Injektion (u. a. Laserbehandlung), prolif. diabet. Retinopathie, ischämischen Retinopathien, retinalem Venenverschluss, exsudativer altersbed. Makuladegeneration (AMD) u. Glaskörperblutung. Vorsicht b. nichtproliferativer Retinopathie, zurückliegender Uveitis (inkl. akut. schw. Entzündg.) od. signifikant. Augentrauma (nur begrenzte Erf.). Keine klin. Daten z. gleichzeit. Anw. v. Ocriplasmin u. VEGF-Hemmern. **Warnhinweise:** D. Auftreten v. Linsenluxation od. Phakodonesis kann nicht ausgeschlossen werden. Wg. d. pot. Anstiegs d. Traktionskräfte besteht ein Risiko d. Auftretens neuer od. d. Vergrößerung existierender Makulalöcher. Währ. d. 1. Wo. nach Injektion besteht ein Risiko eines signifik., aber vorübergehenden Verlusts d. Sehschärfe. Pat. entsprechend überwachen. Da keine Kompatibilitätsstudien durchgeführt wurden, Arzneim. nur mit steriler, konservierungsmittelfreier, ungepufferter Kochsalzlösung f. Injektionszwecke (Konz. 9 mg/ml (0,9 %)) mischen. **Schwangerschaft und Stillzeit:** Nur anzuwenden, wenn klin. Nutzen potentielle Risiken übersteigt. **Nebenwirkungen:** *Sehr häufig:* „Fliegende Mücken", Augenschm., Bindehautblutung. *Häufig:* vermind. Sehschärfe, Verschlechterung d. Sehens, verschwomm. Sehen, Netzhautblutung, Glaskörperblutung, Netzhautabriss, Netzhautablösung, intraokularer Druck erhöht, Makulaloch, Makuladegeneration, Netzhautdegeneration, Makulaödem, Ödem der Retina, Pigmentepithelerkrankung d. Retina, Metamorphopsie, Glaskörperadhäsionen, Bindehautödem, Augenlidödem, Vitritis, Zellen in d. vord. Augenkammer, Vorderkammerflackern, Iritis, Photopsie, Bindehauthyperämie, okulare Hyperämie, Glaskörperablösung, Retinogramm anomal, Augenreizung, trockenes Auge, Fremdkörpergefühl im Auge, Augenjucken, Augenbeschw., Photophobie, Chromatopsie. *Gelegentlich:* vorübergehende Blindheit, Subluxation der Linse, Skotom, Gesichtsfelddefekt, Diplopie, Hyphäma, Miosis, Pupillen ungleich, Hornhautabschürfung, Entzündung d. vorderen Augenkammer, Augenentzündung, Bindehautreizung. **Wechselwirkungen:** Ocriplasmin ist ein proteolyt. Enzym m. Serinprotease-Aktivität, das auch nach der intravitrealen Inj. einige Tage im Auge präsent sein kann. Die Verabreichung and. Arzneim. in dasselbe Auge mit gering. zeitl. Abstand kann d. Aktivität beider Arzneimittel beeinflussen u. wird nicht empf. Keine system. WW zu erwarten. **Hinweis:** Reaktionsvermögen kann beeinträchtigt sein. Im Gefrierschrank lagern (–20 °C ± 5 °C). **Dosierung:** Die empfohlene Dosis beträgt 0,125 mg (0,1 ml der verdünnten Lösung), die nur einmal als intravitreale Einzeldosis in d. betroff. Auge injiziert wird. **Packungsgröße:** 1 Durchstechflasche mit 0,2 ml; Konzentrat (PZN 05024979), Alcon Pharma GmbH, Blankreutestraße 1, 79108 Freiburg i. Brsg. Stand: März 2013

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