Comparison of Refractive Outcomes After Diffractive Multifocal IOL Implantation: Femtosecond Laser Versus Conventional Phacoemulsification

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BACKGROUND

- The goal in modern cataract surgery is not only to restore visual acuity and reach emmetropia but also to gain spectacle independence for distance and near vision.
- Today, this can be achieved with the implantation of multifocal intraocular lenses (IOLs) during cataract surgery.[1]
- Femtosecond laser has been used during cataract surgery for anterior capsulotomy, lens fragmentation, and clear corneal incisions (CCIs).
- Numerous studies have reported the possible advantages of femtosecond laser over conventional phacoemulsification cataract surgery.[2]

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PURPOSE

To compare refractive outcomes with diffractive multifocal IOL (MF-IOL) between femtosecond laser and conventional phacoemulsification.

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METHODS

- Prospective, consecutive cohort study.
- 115 consecutive eyes undergoing femtosecond laser cataract surgery (GROUP 1) and 150 eyes underwent conventional phacoemulsification cataract surgery (group 2).
- Both group had implantation of MF-IOL.
  (ReSTOR, Alcon Laboratories Inc. +3.00 D add)
- Lens power was determinated with the IOLMaster, SRKT formula.
  (Carl Zeiss Meditec AG)
- Refractive parameters were collected pre- and postoperatively at 1 day, 3 weeks and 3 months.
- Setting: Instituto Docente de Especialidades Oftalmológicas, IDEO. Maracaibo – Venezuela.

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METHODS

- The cases underwent anterior capsulotomy, lens fragmentation, and corneal incisions with the femtosecond laser (Alcon LenSx, Inc.) and by conventional phacoemulsification.

- The procedure was completed by phacoemulsification and implantation of an IOL.

- All data were collected in an Excel database (Microsoft Office 2010, Microsoft Corp.).

- Statistical analysis was performed using SPSS for Windows software (version 16.0, SPSS, Inc.) and expressed as mean, standard deviation (SD), absolute numbers and percentages.

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RESULTS

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RESULTS

Figura No.1. Refractive Outcomes After Diffractive Multifocal IOL Implantation: Femtosecond Laser Versus Conventional Phacoemulsification

	CONVENTIONAL PHACO	FEMTO FACO
Spherical Equivalent	EE 0.45 DS ± 0.73	EE 0.12 DS ± 0.25
Total Surgeries	150	115
Residual Refractive Error*	17 eyes – 12 patients EE – 0.89 SD ± 0. 62	NONE

* Rios y cols. ¨**Photorefractive Keratectomy For Residual Refractive Error Correction After Multifocal Intraocular Lens Implantation**¨
Presentado en ASCRS, San Francisco, California, Abril 2013.

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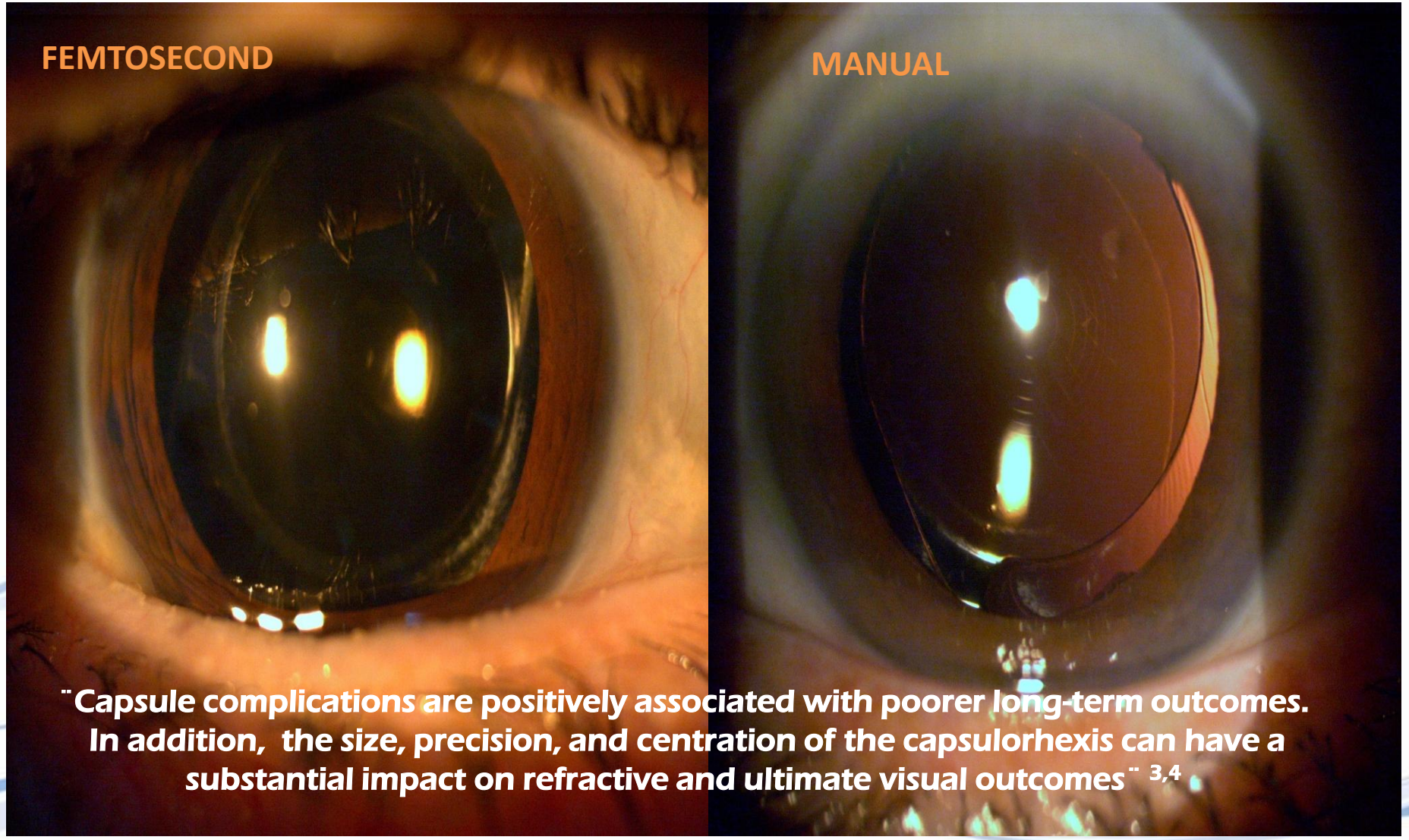
Figure No.2. Capsulotomy: Femtosecond VS Conventional Phacoemulsification



CONCLUSIONS:

Femtosecond laser cataract surgery provides more accurate results than conventional surgery and reduces the risk of residual refractive errors.

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