

REFRACTIVE SHIFT IN ENDOTHELIAL KERATOPLASTY

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Background

- ◎ DSAEK; Desemet Stripping Automated Endothelial Keratoplasty
 - is the gold standard and the treatment of choice over PK in the surgical management of corneal endothelial diseases such as
 - Fuchs Endothelial Dystrophy, FED
 - Pseudophakic Bullous Keratopathy, PBK
 - Endothelial failure after PK
 - IridoCorneal Endothelial syndrome

DSAEK vs PK

DSAEK

- ⦿ rapid visual recovery
- ⦿ less surgically induced astigmatism and ametropia
- ⦿ less long-term risk of wound dehiscence
- ⦿ reduced risk of intraoperative expulsive hemorrhage
- ⦿ reduced incidence of graft rejection

PK

- ⦿ corneal denervation causes a neurotrophic status leading to epithelial complications

Disadvantages

⦿ DSAEK:

- The greatest endothelial cell loss seems to occur during donor insertion
- main concern surrounding DSAEK remains the rate of postoperative endothelial cell loss

⦿ PK

- suture-related complications.
- Anisometropia
- long duration of visual rehabilitation
- risk of intraoperative expulsive haemorrhage
- long-term risk of corneal allograft rejection
- wound rupture with minor trauma

Purpose

- To evaluate the refractive shift following Descemet's Stripping Automated Endothelial Keratoplasty (DSAEK) in pseudophakic patients
- To report on the visual outcome

Methods

- Retrospective case series analysis of the visual outcome and refractive shifts after DSAEK
- Data including predicted refraction after phacoemulsification was collected, analysed and compared to the refractive outcome after DSAEK

Results

- Twenty three cases of DSAEK were included
- Consecutive cases performed under the care of a single surgeon (VK) between June 2009 & April 2011 in two sites in South Wales; UHW & POWH

Demographic Data

⦿ Gender:

- 10 Male.
- 13 Female.

⦿ Age:

- Range; 52- 90 years.
- Mean; 73 years.

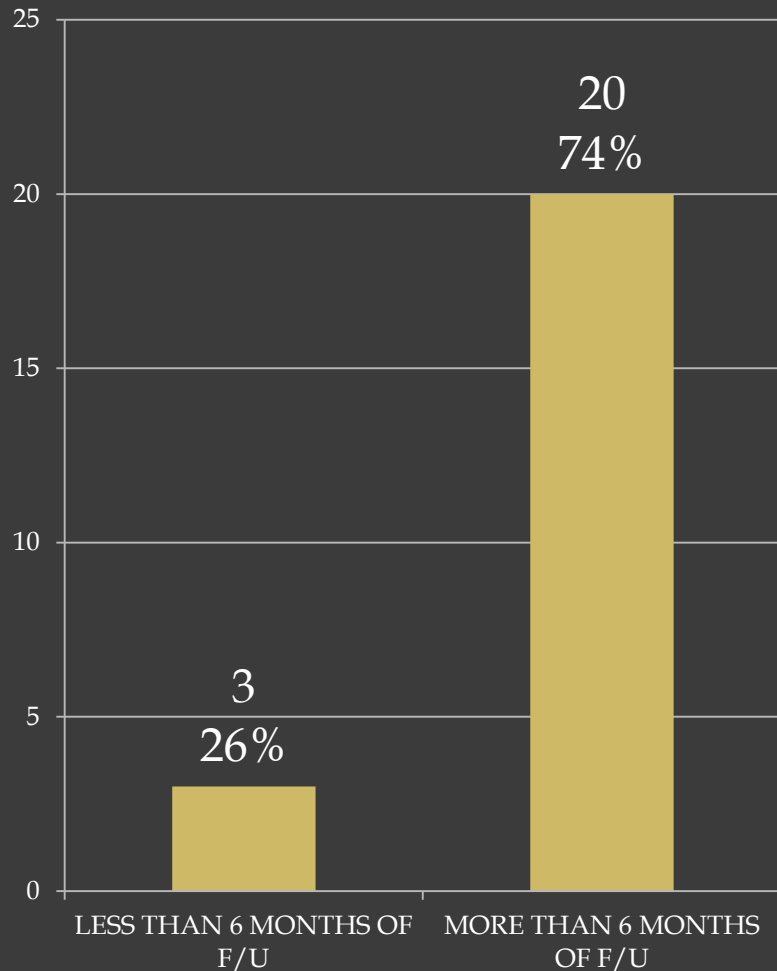
Diagnosis

- ◎ FED;
 - 18 EYES
 - 78%
- ◎ PBK;
 - 5 EYES
 - 22%

Lens Status at Time of Surgery.

- ⊙ 22 Pseudophakic Eyes;
 - 21 Phacoemulsification
 - 1 ECCE
- ⊙ 1 patient had combined Phaco & DSAEK
- ⊙ Mean targeted spherical error was -0.6 D.
- ⊙ Ranges from 0.0 D to -1.14 D

Duration of Follow up.



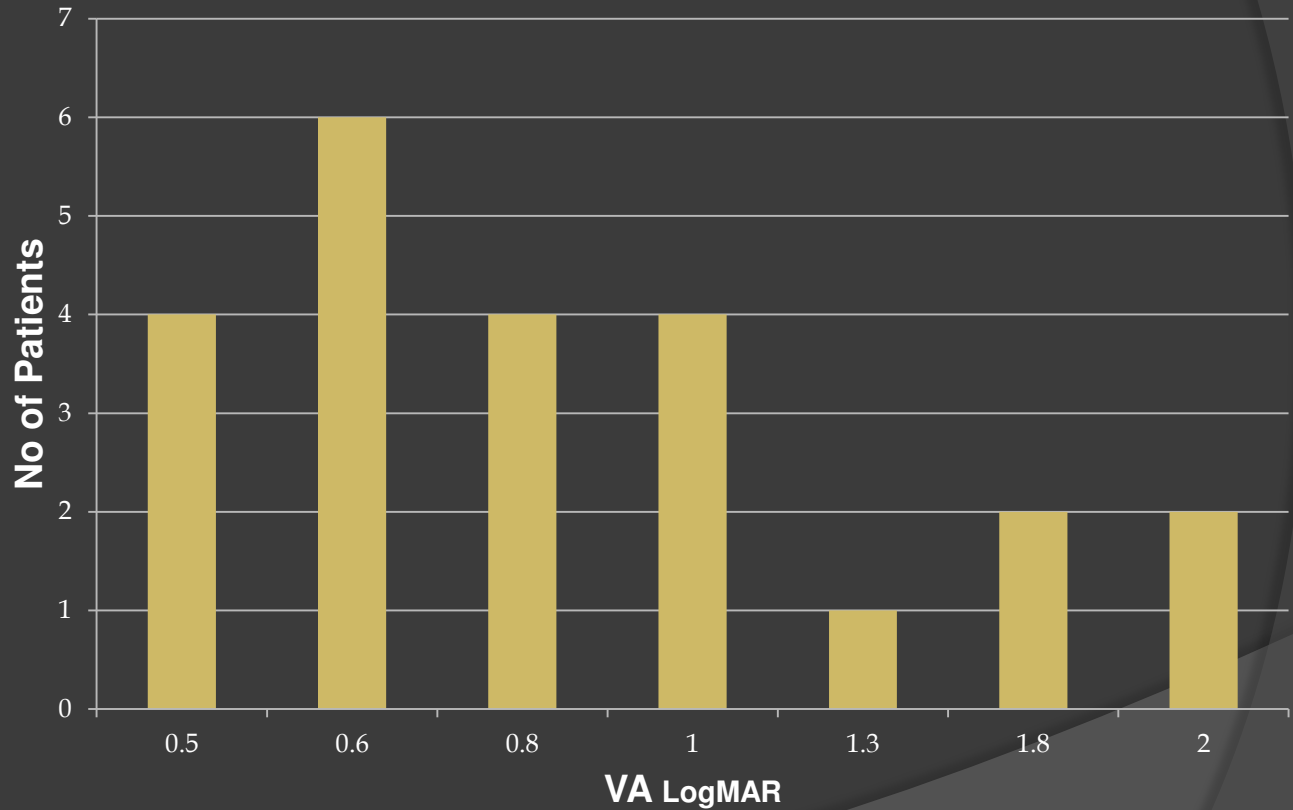
- Ranges from 2 – 21 months.

- Mean follow up : 9.8 months.

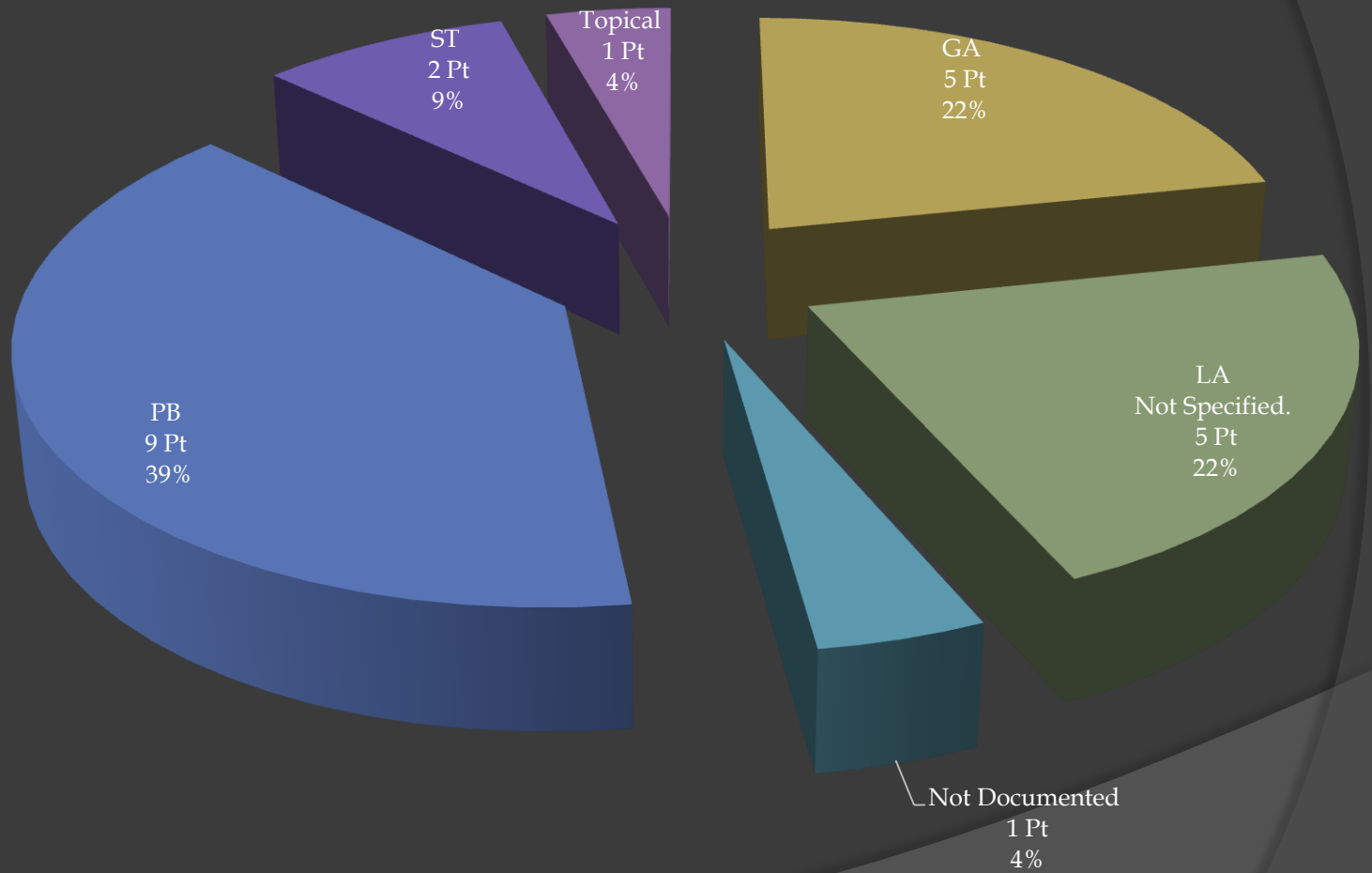
Pre Op. VA LogMAR

Range from:
0.50 – 2

Mean; 0.95



Anesthesia

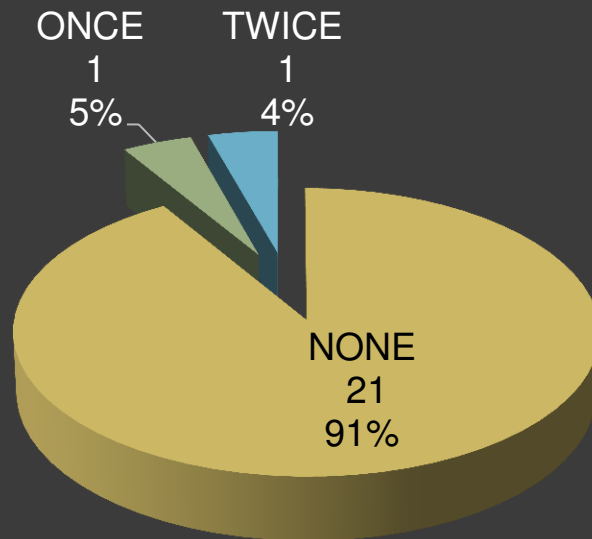


INTRA OPERATIVE COMPLICATIONS

- No intra-operative complications were recorded

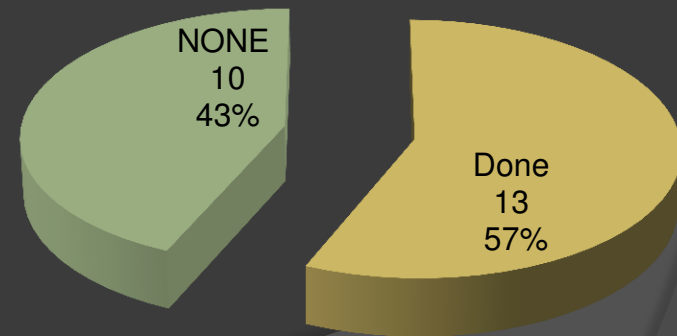
Further Surgical Procedures

● Rebubble Rate



▣ Selective Removal of Sutures

- Range; 2-8 months
- Mean; 4 months

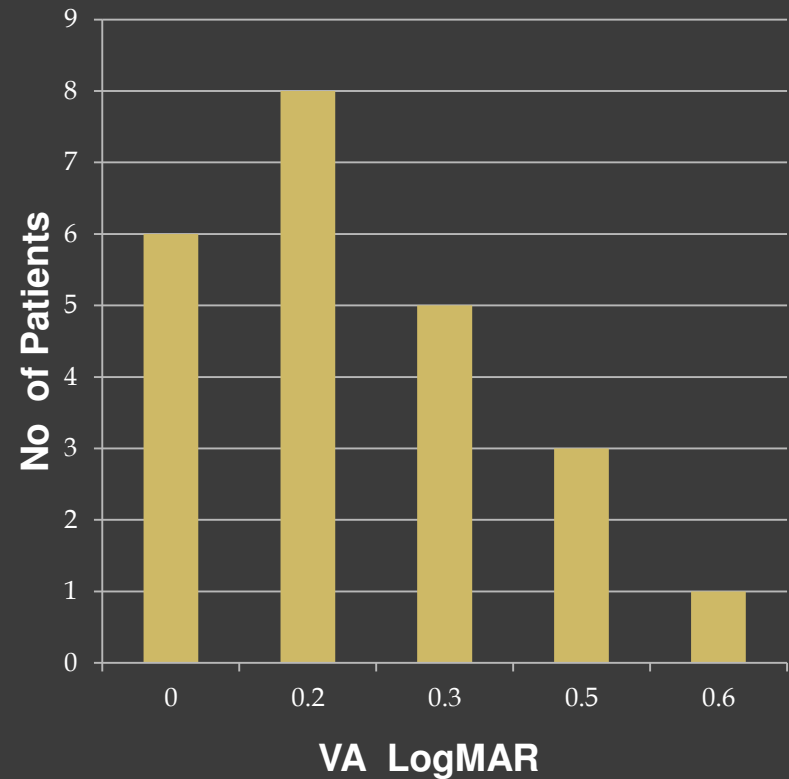
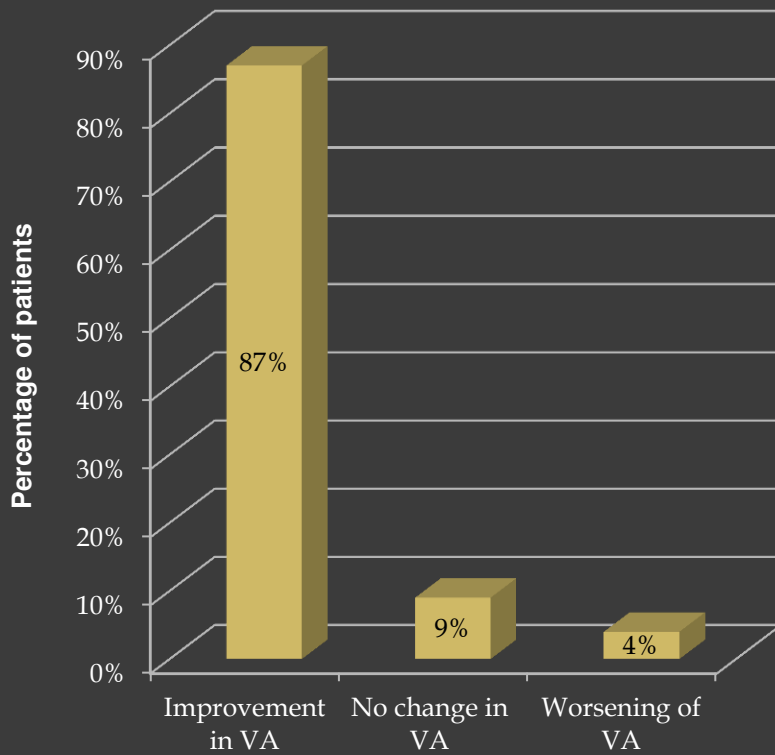


Post op. VA

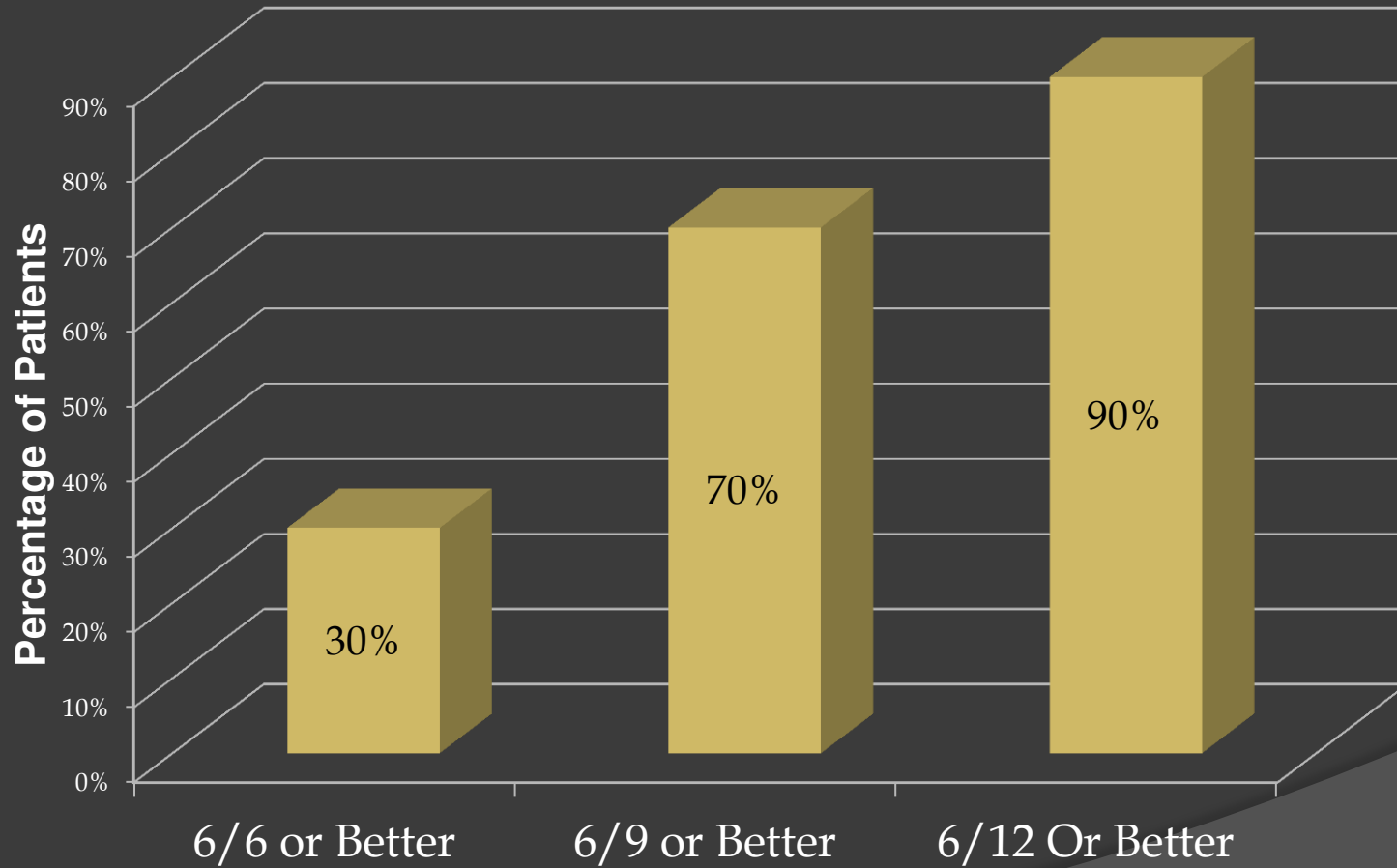
Change in VA

Range: 0.60 – 0.0

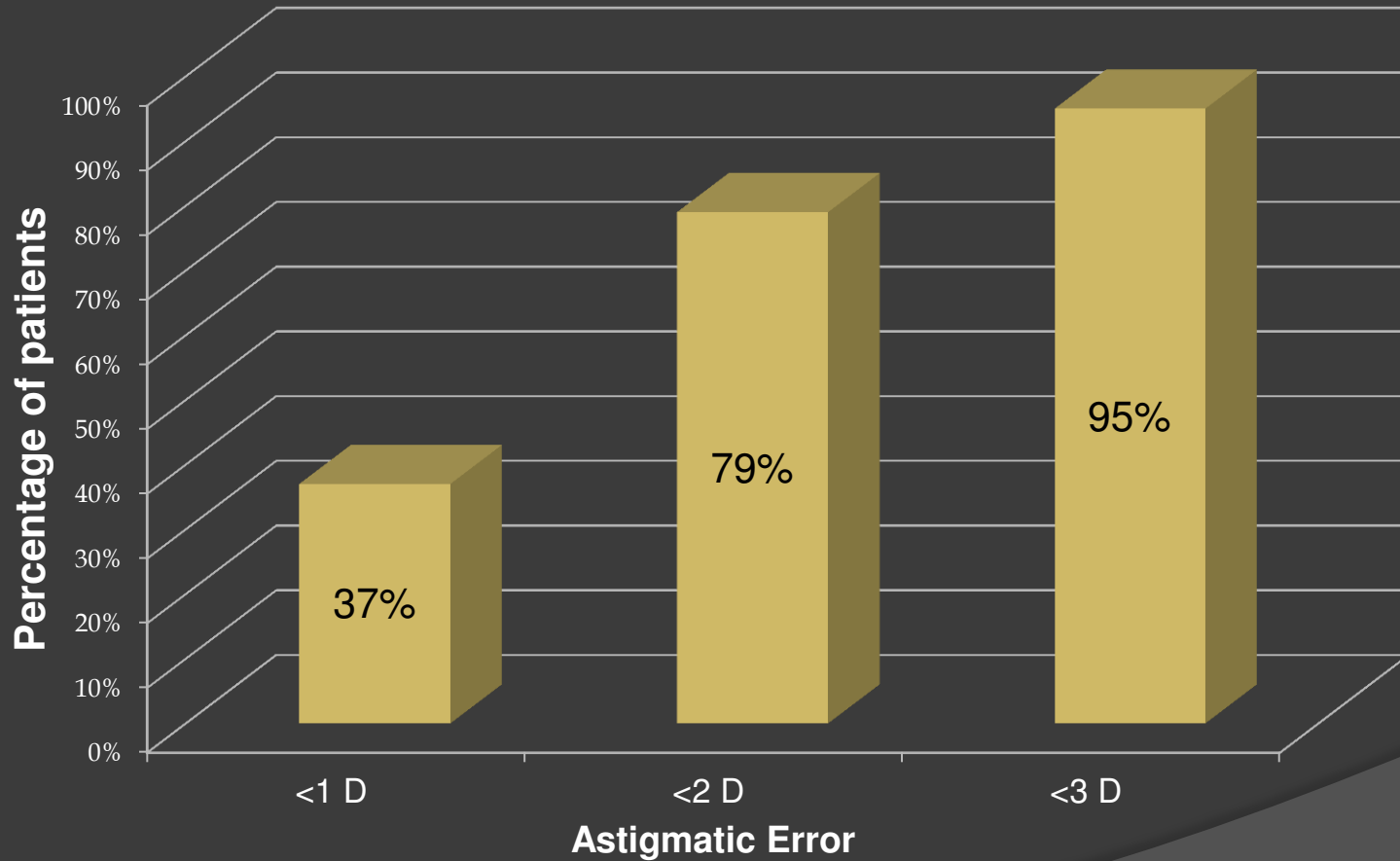
Mean; 0.22



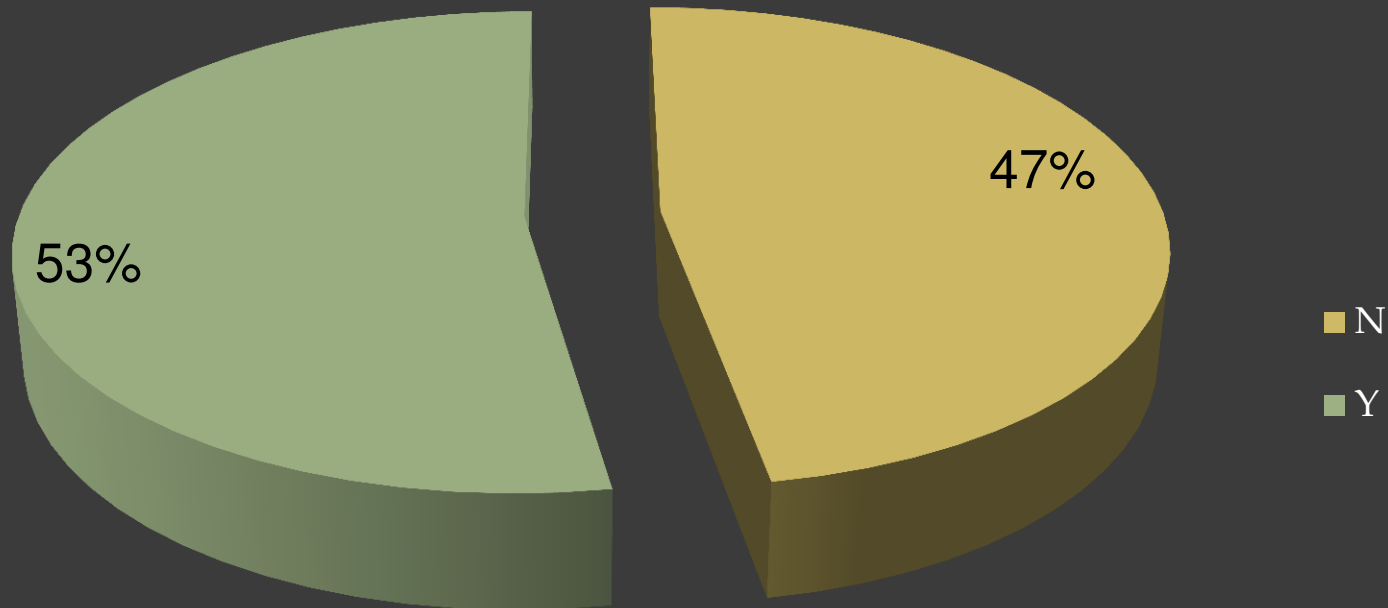
Post Operative VA



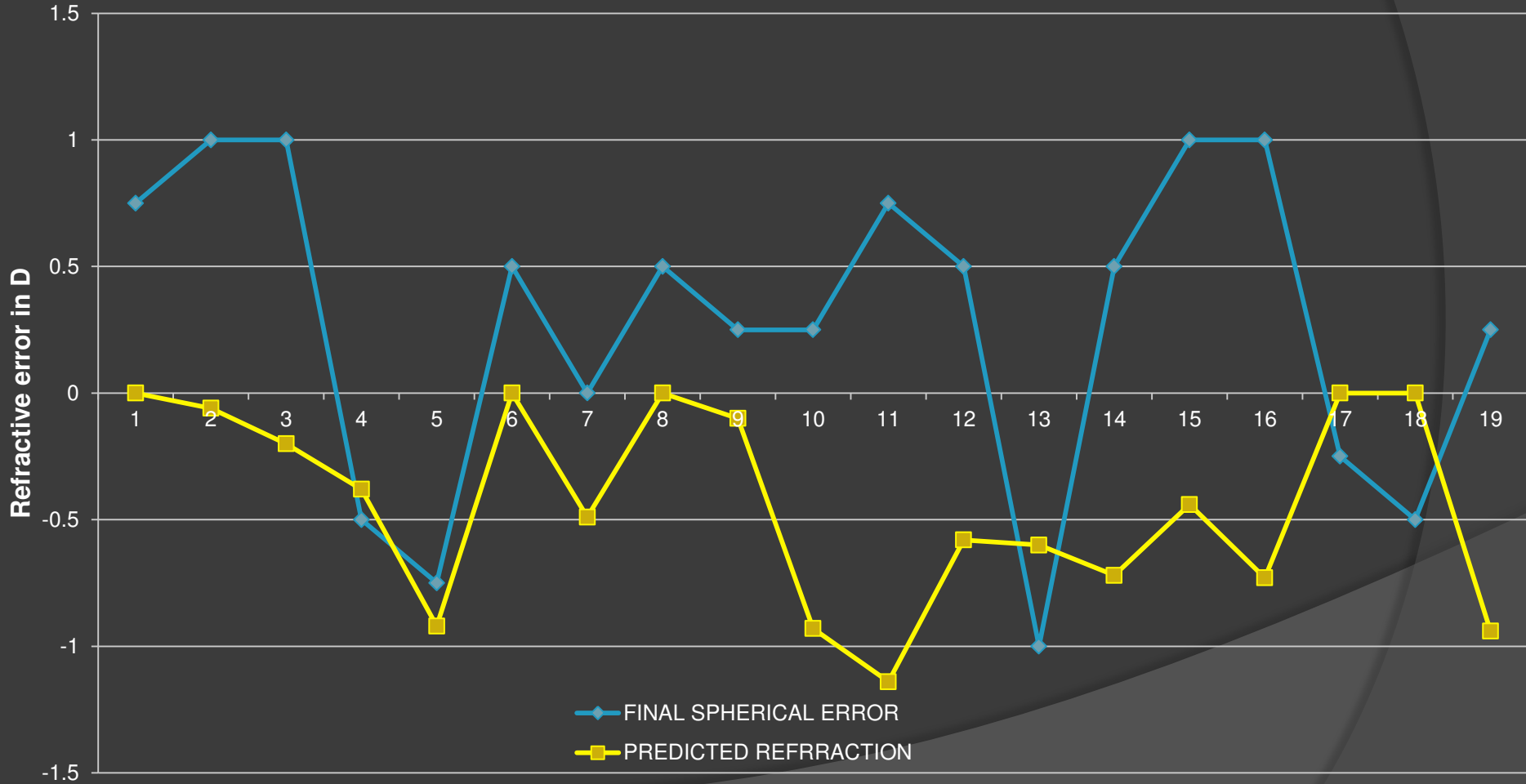
Post Op. Astigmatism



Post Operative Spherical Equivalent of 0.50 D Or Less



Targeted Vs Final Spherical Error



Targeted Vs Final Spherical Error

Targeted ⁽¹⁾

- Mean Targeted spherical error was -0.6 D.
- Ranges from:
0.0D to -1.14D;

Final

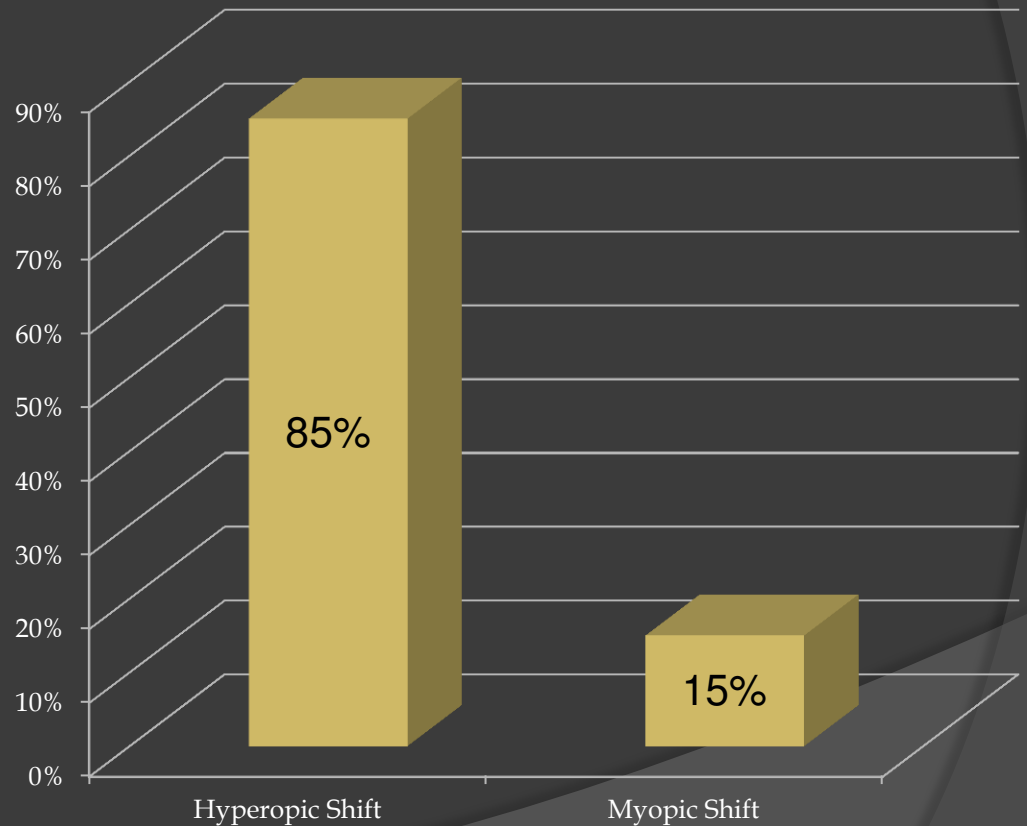
- Mean; + 0.28 D
- Ranges between
(-1.0 to +1.0 D)

(1): SRK/T, Adjusted for A Cons of IOL

Refractive Shift

Mean refractive shift was
+0.88 D

Range; -0.40D to
+1.75D



POST OP COMPLICATIONS

- ⦿ Infective Keratitis recorded in one patient post op. resulted in central corneal scarring with reduced VA
- ⦿ Difficulty in posturing in one patient resulted in re-bubbling twice
- ⦿ Graft displacement where no action needed so far, noticed in two patients
- ⦿ Two patients developed Raised IOP , medically controlled

GRAFT REJECTION

- No episode of Graft rejection recorded

Conclusion

- ⦿ DSAEK procedure resulted in a small hyperopic shift
- ⦿ It should be factored in the target refraction at the time of phacoemulsification in patients at risk of corneal decompensation

THANK YOU