Surgery for Vitreous Hemorrhage (PDR) Combined Vitrectomy, Laser and Anti VEGF

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Surgery for Vitreous Hemorrhage (PDR)

Combined Vitrectomy, Laser and Anti VEGF

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DRVS for early vitrectomy in VH PDR (1985)

- Early VH, VA <5/200, ≥1 month are eligible for early pars plana vitrectomy (PPV) (in 1-6 months) or conventional (until macula detach or unclear vitreous >1 year)
  - After 2 yrs, good vision gain 25% in early PPV, 15% in conventional
  - Type I DM has better outcome than type II
  - Approximately 20% of these worsened to no light perception after PPV
  - *Delayed* PPV in type II is not recommended
- Improvements in PPV techniques such as endolaser, C3F8 injection, better microscopeviewing systems, and earlier vitrectomy
  - only 3% progressed to poor visual outcome (Mason AJO 2005)

PPV for VH PDR : Indications

- Visually significant, non clearing hemorrhage
- Tractional RD involving or threatening macula
- Combined Tractional-Rhegmatogen RD

Early PPV should be considered if NV is extensive and rapidly progressive

PPV- difficulties

- Intraoperative hemorrhage
- Difficult to do fibrovascular membrane dissection (delamination or segmentation)
- Postoperative vitreous hemorrhage (VH)

TIPS

Laser prior to PPV as much as possible (needs clear media, take 2-3 weeks until BV regressed, facilitate MP)

Avoid inflamed eye, risk of fragile retina (iatrogenic break, unreleased traction, etc) : PRP

Anti VEGF injection

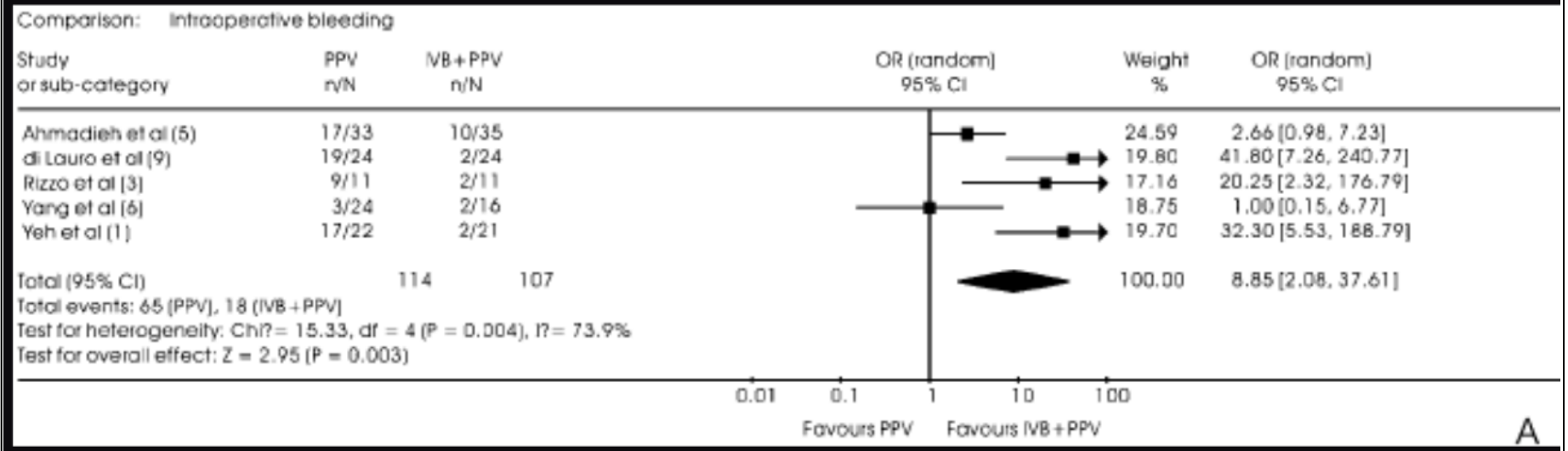
- Regressed blood vessel (no need clear media, short effect)
- Anti-inflammatory (swelling, inflamed vitreous/retina, etc)

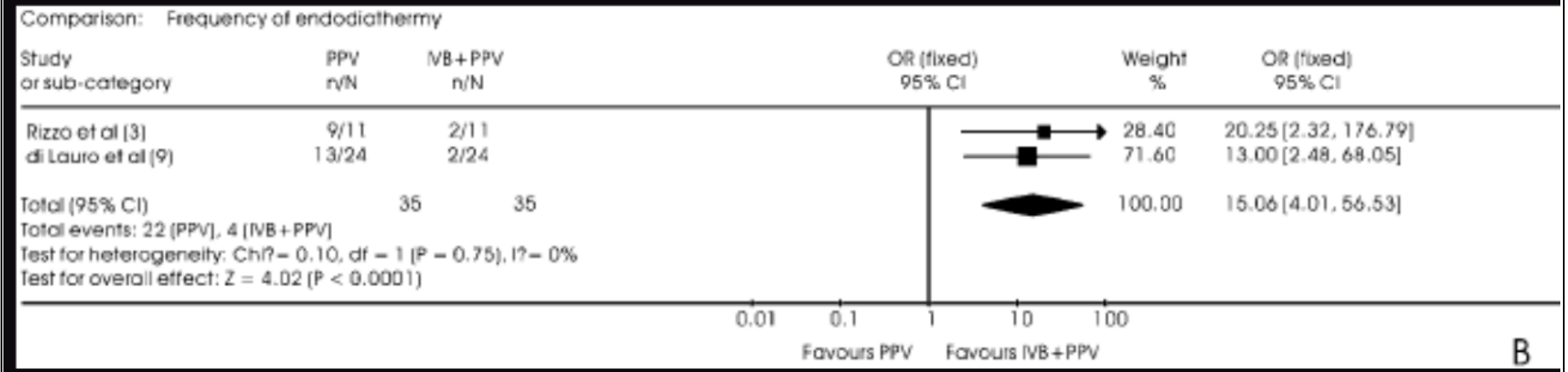
PROs

- To decrease intraoperative hemorrhage
- Facilitate fibrovascular membrane dissection, easier separation of FVM from the underlying retina
- Reduce postoperative vitreous hemorrhage (VH) rates

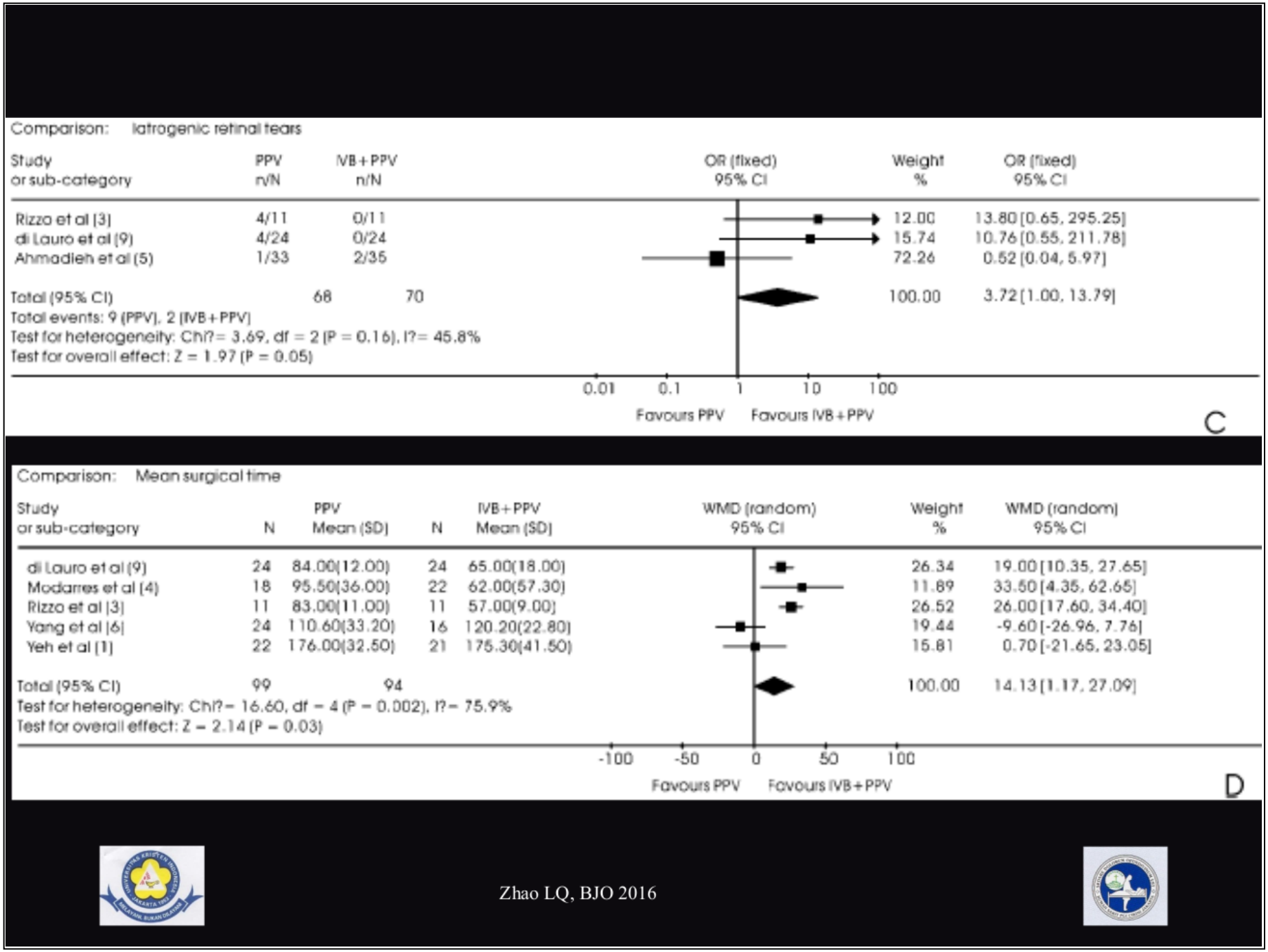
debateful…

Meta-analysis IVB Pre PPV





Zhao LQ, BJO 2016



Zhao LQ, BJO 2016

IVB Pre PPV versus PPV Alone

- Incidence of intraoperative bleeding and frequency of endodiathermy $p<0.01$
- Less surgical time than the control group ($p=0.003$).
- Shorter reabsorption time of blood ($p=0.04$)
- Incidence of recurrent VH ($p=0.05$)
- Better final best-corrected visual acuity ($p=0.003$)
- Other complications, including final retinal detachment, and reoperation, were statistically insignificant

Zhao LQ, BJO 2016

- The surgical endpoint was the relief of traction on the macula and areas of TRD and a clear vitreous cavity.
- Dose IVB 1.25 mg 2-4 days before PPV
  - early incidences of recurrent VH (<1 week) eligible for PPV
  - Can be detected in the retinal tissue 14 days after intravitreal injection (Chen, Retina 2006)
  - 7-day with 20-day previtrectomy IVB gave similar clinical outcome but more difficult surgery in 20-day group
  - Cikini Hospital : 2.5 mg/0.1 ml + 0.1 ml Dexa 1-10 days before PPV

IVB Pre, Durante, Postop ?

PROs and CONs

PROs

- To decrease intraoperative hemorrhage and
- Facilitate fibrovascular membrane dissection
- Reduce postoperative vitreous hemorrhage (VH) rates

CONs

- Concern still exists that IVB may worsen TRD
- May cause the foveal vascular zone enlargement

THANK YOU

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