

## Role of laser photocoagulation and intravitreal Injection of Lucentis in the treatment of retinopathy of prematurity

Waseem Jafri

Armed Forces Hospital, Saudi Arabia

**Purpose:** To determine the effect of laser photocoagulation with or without intravitreal Lucentis injection in the treatment of retinopathy of prematurity (ROP). **Methods:** 68 eyes of 34 premature babies were treated for ROP in 44 months. 54 eyes received laser. 12 eyes received laser and intravitreal Lucentis injection. 2 eyes received only intravitreal Lucentis injection. Retinopathy of immaturity (ROP) may be a vasoproliferative disorder touching the retinas of premature infants. The screening, treatment, and pathophysiologic understanding of ROP have dramatically evolved over the past four decades. 2 landmark studies, Cryotherapy for ROP (CRYO-ROP)<sup>1</sup> in 1988 and Early Treatment for ROP (ETROP)<sup>2</sup> in 2004 have served because the stepping stones for establishing treatment tips with relevancy threshold and prethreshold kind ROP. Most recently, however, intravitreal anti-vascular epithelial tissue protein (anti-VEGF) agents for ROP have received abundant attention within the health profession as a possible various. reported blessings of anti-VEGF pharmacotherapy over optical device surgery embody reduced treatment time with less stress on the newborn, swift resolution of and malady with prompt regression of ROP, potential of any membranal vascular development with no ablation of the peripheral avascular retina, lower risk of shortsightedness, and improved treatment outcomes for zone I ROP or AP-ROP.<sup>3–5</sup> Anti-VEGF may additionally be the sole treatment choice in cases of media opacity or vitreous hemorrhage once Associate in Nursing too little read is gift for optical device surgery. One of the biggest anti-VEGF studies in ROP to this point, the BEAT-ROP (Efficacy of Intravitreal Bevacizumab for Stage 3+ Retinopathy of Prematurity) trial,<sup>5</sup> found that bevacizumab (Avastin; Genentech INC, South San Francisco, California, USA) will halt the progression of severe ROP, revert pathologic angiogenic changes, and induce the progression of physiological intraretinal vasculature. Of note, BEAT-ROP was the primary prospective study to analyze anti-VEGF use for ROP at time once the preponderance of literature was within the style of retrospective case reports and series. though initial

studies on anti-VEGF medical aid for ROP have targeted on bevacizumab, recent studies have projected the utilization of ranibizumab (Lucentis; Genentech INC, San Francisco, CA/Novartis Ophthalmics, Basel, Switzerland) for the treatment of ROP. during this article, we tend to review this proof of ranibizumab for the management of ROP. Like ranibizumab, bevacizumab is another antibody that binds and inhibits all isoforms of VEGF with a lower affinity (Table 1). Ranibizumab and bevacizumab find within the receptor-binding region of VEGF and each antibodies target VEGF in a very similar means. However, bevacizumab (149 kDa) and ranibizumab (48.39 kDa) have totally different molecular weights, principally as a result of ranibizumab doesn't contain a fraction crystallizable (Fc) region. Figure one shows the molecular structure of ranibizumab that has an important chain (antigen-binding fragment) and lightweight chain. moreover, bevacizumab is made in a very organism cell line and is N-glycosylated in its Fc region, whereas ranibizumab is made in organism *E. coli*, and thus it doesn't carry any glycosylation sites. in addition, although each bevacizumab and ranibizumab area unit off-label treatments for ROP, for different ocular conditions, bevacizumab is simply federal agency approved for blood vessel administration, whereas ranibizumab is approved and developed for intraocular administration. In clinical apply within the us, bevacizumab is combined for intraocular use from the blood vessel formulation by combining pharmacies.

**Results:** ROP regressed in 64 eyes. Four eyes progressed to stage 5 ROP in spite of all treatment..

**Conclusion:** Laser photocoagulation is the mainstay of treatment of ROP. However, intravitreal injection of Lucentis is important in the management of acute posterior retinopathy of prematurity (APROP) where laser photocoagulation is technically difficult to perform due to inadequate pupillary dilatation and peripheral lens vascularization in very premature babies with APROP