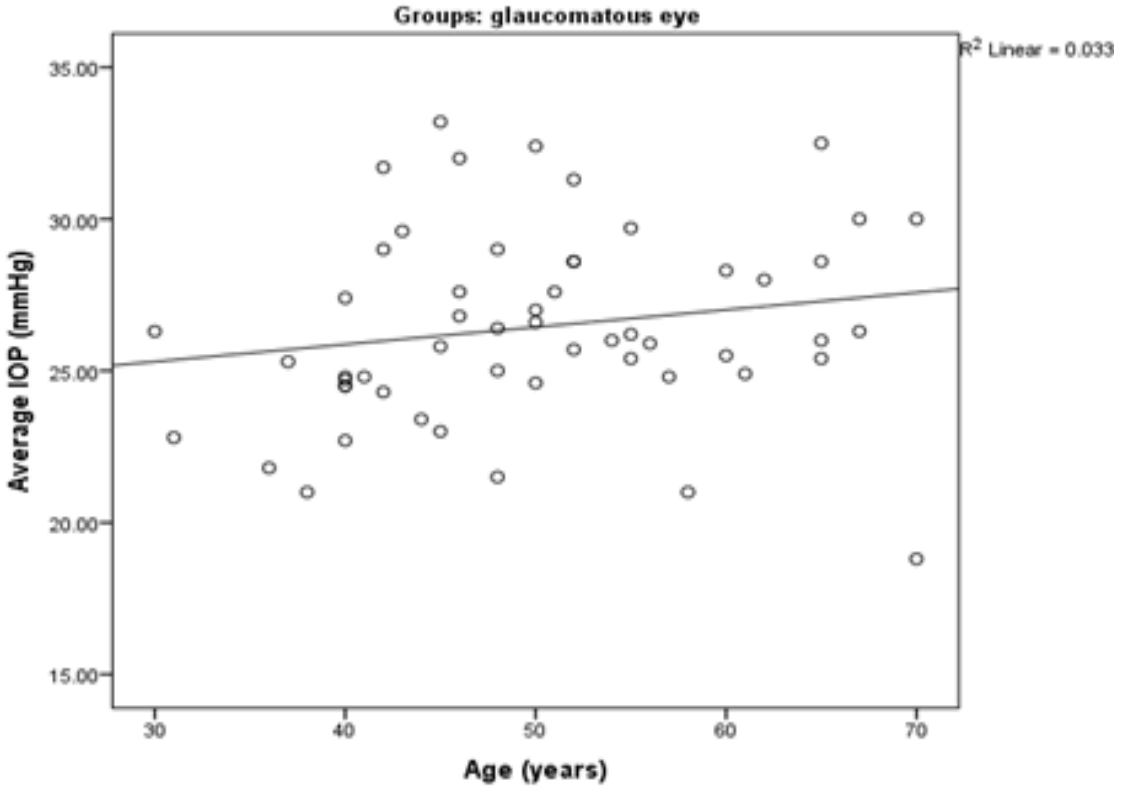

Figure 2: *Mean IOP with age in years in POAG subjects*

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Minimally Invasive Glaucoma Surgery (MIGS): Economically Viable in Sub-Saharan Africa

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Purpose: To brief describe an overview of different types of Minimally Invasive Glaucoma Surgery (MIGS); to analyse the economically viable MIGS in Africa and to identify the benefits of MIGS

Methods: Case presentations of Gonioscopy Assisted Transluminal trabeculotomy (GATT), Kahook Dual Blade (KDB)

Discussion: Classification of MIGS based on site of action

A. Schlemm's canal Trabecular bypass
   1. Istent
   2. Istent inject high frequency deep sclerectomy
B. Sclemm's dilatation
   1. Ab interno canaloplasty- viscocanalostomy
   2. Hydrus
C. Trabeculotomy /Goniotomy
   1. GATT
   2. Kahook Dual Blade
   3. 23g cystotome
   4. Excimer Laser Trabeculotomy
D. Suprachoroidal
   1. Intra-Scleral Ciliary Sulcus Suprachoroidal Microtube[10]
   2. Ab interno : CyPass (withdrawn)
   3. Istent Supra
E. Subconjuctival space
   1. Ab interno : Xen Gel stent
   2. Ab externo : Preserflo
F. Ciliary body
   1. Ab interno : Endocyclophotocoagulation

The trabecular or conventional pathway accounts for the largest part of aqueous humor outflow. Aqueous humor drains through the trabecular meshwork into Schlemm canal, then into network of vessels through the collector channels. The pathophysiology of Primary Open-Angle Glaucoma is due to loss of permeability of the entire thickness of the trabecular meshwork, collapse of Schlemm canal, and at the downstream resistance at the collector channel entrance. [1] MIGS is a group of interventional procedures that improve the aqueous drainage through its natural course and thus reducing the intraocular pressure.[2] They are offered to patients with mild to moderate glaucoma. The cost of Istent is about $1195, Preserflow and Xen gel cost about $2000. The GATT and Trabectome may cost between $600 -$1000. The Average per Capital income and the purchasing power parity are low in most countries in Sub-Saharan Africa (SSA). Generally, health financing systems in SSA are characterised by low government spending, under-developed insurance schemes, high out of pocket payments, and high dependence on external donor and funding. Health expenditure per capita in Africa in 2016 averaged $80 compared with $4003 in Organisation for Economic Co-operation and Development countries.[3,4] Economic viability of the device based MIGS is not feasible. The use of 5/0 Prolene for GATT[5,6], 23g cystotome needle[7] and Kahook dual blade(KDB)[8] in Goniotomy or a Tanito ab-interno trabeculotomy micro hook[9] which is reusable, could be more economically viable in SSA. The cost implication for these procedures could run from a few cents to about $100 which could be a more cost-effective approach.

Conclusion: MIGS preserve conjunctiva for future surgeries and prevent bleb related complications such as Blebitis. Quality of life of our patient can be improved with MIGS. Currently, economically viable MIGS in Africa include the GATT, 23G Cytotome, KDB and Suprachoroidal microtube shunt.

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