Complex Retinal Surgeries in Diabetic Retinopathy

– A Project by

Vittala International Institute of Ophthalmology (A unit of the Sri Keshava Trust)

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What is diabetic retinopathy?

Diabetic retinopathy is a condition in which high blood sugar causes retinal blood vessels to swell and leak blood thus damaging it.

Who's at the most risk for diabetic retinopathy?

Fluctuating blood sugar levels increase risk for this disease, as does long-term diabetes.

Most people don't develop diabetic retinopathy until they've had diabetes for at least 10 years.

So these set of people who have been diagnosed to have diabetes have to undergo regular ophthalmological examination regularly as advised by the specialist ophthalmologist.

1. All people who have Diabetes irrespective of the age and duration of diabetes
2. Pregnant ladies who develop gestational diabetes
3. Children with Diabetes mellitus

Is there any way to prevent diabetic retinopathy?

Keeping your blood sugar at an even level can help prevent diabetic retinopathy. If you have high blood pressure, keeping that under control is helpful as well.

Even controlled diabetes can lead to diabetic retinopathy, eyes must be examined once a year by specialist ophthalmologist, that way, any retinal damage can be treated as soon as possible.

What are the signs and symptoms of diabetic retinopathy?

In the early stages of diabetic retinopathy, there might be no symptoms at all, or might have blurred vision.

In the later stages, cloudy vision, blind spots or floaters might develop. But never assume that good vision means all is well in the retina!

What are the different types of diabetic retinopathy?

Diabetic retinopathy is classified as either non proliferative or proliferative.

Nonproliferative retinopathy is the early stage, where small retinal blood vessels break and leak fluid causing edema or fluid accumulation.

In proliferative retinopathy, new blood vessels grow abnormally within the retina. This new growth can cause bleeding ,scarring or a retinal detachment, which can lead to vision loss. The new blood vessels may also grow or bleed into the vitreous humor, the transparent gel filling the back of the eye in front of the retina.

Is diabetic retinopathy curable?

No. Early treatment can slow the progression of diabetic retinopathy, but is not likely to reverse any vision loss.

What diabetic retinopathy treatments are currently available?

The best treatment is to keep your diabetes under control; blood pressure control also helps.

Treatment options:

1. Laser treatment
2. Intravitreal injections
3. Vitrectomy surgery

LASER TREATMENT:

Laser treatment is used to treat leaky blood vessels and also to reduce the new vessel growth

INJECTIONS:

These are given into the eye to reduce the fluid accumulation which is already accumulated in the retina and also to reduce the growth of new vessels .

VITRECTOMY SURGERY:

Surgery is done in complicated cases where bleeding has already occurred in the eye or in cases of retinal detachment which occurs due to scarring.

Why is this Project Needed?

Challenges faced:

1. Educating pts that diabetes affects the eye.

2. Pts not able to procure a multidisciplinary approach for diabetes.

This condition requires multiple visits to different specialities of medical field, physician, cardiologist, podologist, ophthalmologist, nephrologists, surgeon nutritionists, etc

3. Most of our diabetic population are residing in remote areas where accessibility to specialised investigation and treatment is difficult to procure.

So there requires a methodology where, patients receive these specialised interventions and treatments at an affordable subsidized cost.

4. Many of these patients being sole bread winners of their family, it's impractical for them to forego their daily wages, food ,travel expenses and shelter if they are asked to visit the bigger cities where facilities for tertiary care is available...

So one of the challenges are to provide doorstep treatment through mobile treatment unit so that screening, diagnosis and formulation of treatment plan can occur without affecting their daily wages and discomfort of travel and stay in new places.

5. Our next challenge is those treatable patients which require intervention in the form of lasers, OCT scan, FFA, intravitreal injection, complex retinal surgeries, etc

Since these are very costly, poor socioeconomic patients would not be able to afford these in spite of being informed.

As specialists, they also have limitations as all the above interventions are based on pharmaceutical industry and expensive machines.

6. The next step is collaborative software help which help us to track, flag all patients while ensuring a complete data about each of these patients.

Since it involves a different profession, their help and association is also very significant.

7. Our further challenges include our own man power and their financial status. We need technicians, medical and paramedical staff to ensure all these are well coordinated, for which they need to be motivated mentally and financially for such community services to travel and talk to those patients.

8. Last but not the least, we will need come operation from the local community, local service providers, ophthalmologist, doctors and paramedics in helping us deliver utmost care to far reach areas

What is the solution?

Benefits:

To Patients:

1. If the surgeries, injections, investigations are made free, all those poor socioeconomic patients who are affected by DR, will definitely undergo the treatment thereby reducing the complications caused by DR.
2. Standard of living is improved with better treatment facilities.
3. Especially if they are the bread winners of their families, these sort of free treatment to them, will go a long way in stabilization of their psychosocial and economic status.
4. Patients need not be ignorant of the disease and its implications and they will be well informed about their health.... Which overall reflection the community status district wise, state wise and nation wise.

To Medical and paramedical staff:

1. Full hearted social service provided without being guilty.
2. If they are financially looked after, there can be a assured community service targeting the health needs of the people of poor socioeconomic status rather than finding financial gains.
3. Improvisation of their knowledge, work and overall increase in their productivity and satisfaction
4. Overall reducing the burden of diabetic retinopathy and it's complications in the society which helps in the betterment of the nation.

VIIO, in 2016, has implemented the DR project - Field level activity of screening / treatment of DR patients supported by Queen Elizabeth Diamond Jubilee Trust through Public Health Foundation of India with the cooperation of Government of Karnataka in Tumkur District.. Screening takes place every week on regular basis with every Monday at District Hospital Tumkur, Tuesdays at Madhugiri GH, Wednesdays at Pavagada GH, Thursdays at Gubbi GH and Fridays at Koratagere GH. **"Nayana" Mobile Eye treatment Van** is visiting these hospitals in the same order during the Last week of the month for treatment of patients identified for DR. Those patients requiring further treatment are referred to VIIO. To maximize the impact and to ensure that drop outs are minimized, the treatment is offered to eligible patients at the screening locations itself.

So far 3894 patients have been screened and 588 patients have under gone treatment at field level.

An awareness creation workshop conducted prior commencement of the field activities, was attended by 33 Govt and Private Ophthalmologists, Physicians etc

We have developed/ distributed Patient Education material, Education material for ASHAs and CHWs, Brochures and pamphlets, Capacity building on Diabetes related aspects is conducted by doctors on regular basis for field staff of VIIO, technical staff- Optometerists and Ophthalmologists.

Totally 1186 ASHAs/CHWs participated in the Capacity building program conducted by us at Taluk level.

About Vittala International Institute of Ophthalmology

Sri Keshava Trust (SKT), a public charitable trust was started in 1988 by Dr K.R.Murthy, aimed at providing affordable eye care to patients of all economic strata. In 2001 Vittala International Institute of Ophthalmology (VIIO), a unit of SKT, was established. This is a tertiary ophthalmic hospital, spread over 60,000 sq ft and has a state of the art infrastructure to provide quality care to its patients. The organization's motto is "**Shraddahi Paramagathihi**" **(dedication is the ultimate goal)** and we strive to fulfil the dream of our founder

"**No one shall go blind for want of money or lack of care**".

Vittala International Institute of Ophthalmology

Nearly half a million people have directly benefited from our services. 45% of them received this care for free. 72% of the remaining patients received concessions ranging from 10 to 90%. Close to 1680 outreach camps, 118 scientific papers and presentations, 23 postgraduate and 64 paramedical staff trained in the institute so far. SKT is a "Sustainable Charity" and has its activities in clinical work, outreach programs and in research.

"Navana" mobile treatment van

VIIO has been instrumental in planning and implementing diabetic retinopathy and glaucoma mobile eye treatment unit (Nayana), and has been running since 2005. It involves taking highly specialized equipment for treatment of these two conditions to rural areas of 16 districts of Karnataka. The local ophthalmologists are trained to deliver care for diabetic retinopathy.

This project has redefined the standard of care for diabetic retinopathy in our state and has been internationally recognized and replicated in many resource poor settings across nine countries such as Tanzania Bangladesh and other places in India.. This initiative was funded by the World Diabetes Foundation and Infosys foundation.

It was also responsible for running one of the largest tele-ophthalmological screening programmes in India for the disease Retinopathy of Prematurity (ROP), which affects premature neonates. This programme called the "Vittala ROP project" served semi-urban and rural neonatal intensive care units in 10 districts of south Karnataka. The Retinopathy of prematurity screening program has ensured that all neonates in the project area are screened periodically for ROP and receive timely treatment which prevents blindness

This initiative was awarded the FICCI Health Care award for the year 2013. We also offer free retinal surgeries to poor patients with complex retinal conditions such as diabetic retinopathy and retinal detachment.

VIIO continues to run the Paediatric Ophthalmology department at Indira Gandhi Institute of Child Health sciences, a government run premier centre. By setting up the ophthalmology centre in the hospital, we cater to the ophthalmology needs of paediatric patients.

We regularly conduct eye camps at various schools and villages around south Karnataka to screen people for eye defects and provide corrective care in association with organizations like Help age, Lions Club, Rotary, Karuna Trust etc.

Patients found needing additional care are provided necessary hospital care and returned to their home after necessary treatment. All of these medical expenses and the patient's travel, boarding and lodging are covered by funds from Sri Keshava Trust, with no cost to the patients.

We have managed to reach most of Chamarajanagara, Kolar, Tumkur and Bangalore districts.

Patients at Eye Camps organized by VIIO

Vittala International Institute of Ophthalmology has a fully Air conditioned operating theatre complex with 04 functionally operative tables, precision surgical microscopes & other sophisticated equipments which are in line with world class standards.