ABSTRACT... Objectives: To review the prevalence of primary open angle glaucoma in patients with high myopia. Study Design: Observational Study. Setting: Department of Ophthalmology, KDA Teaching Hospital Kohat. Period: January 2019 to December 2019. Material & Methods: During this period 93 high myopic patients were selected. Informed consents were taken from them after explaining the purpose, procedure and tests required for diagnosis. Out of 93 patients 74 were male and 19 were female. Age range of the patients was from 20 to 57 years with mean age 43 years. Proper proforma was designed for documentation of intraocular pressure, perimetry, fundoscopy (Cup-disc ratio) and Optical coherence topography. Refraction of all patients was done with auto-refractometer and then subjectively. All 93 patients were high myopic with refractive error of -6 diopter spherical and above. Intraocular pressure was checked with air puff tonometer. Anterior segment examination was checked with slit lamp. Gonioscopy was done in 9 patients whose angles were suspected to be narrow or open. Pupils were dilated with tropicamide eye drops. Fundoscopy with direct and indirect slit lamp biomicroscopy was done for Cupped-Disc ratio. 2 patients who had high intraocular pressure with no glaucomatous cupping disc were advised Optical coherence topography. Perimetry to all patients was advised with automated visual field analyzer. Results: Out of 93 high myopic patients 13(13.97%) had glaucomatous features. Out of 13 patients intraocular pressure more than 21mmHg and glaucomatous field defects were present in 100% while glaucomatous cupping discs were present in 11(84.61%) patients. Conclusion: High myopia is high risk association with open primary angle glaucoma. Key words: Cupped-Disc Ratio (CDR), Diopter Spherical (DS), Intra Ocular Pressure (IOP), Optical Coherence Topography (OCT), Primary Open Angle Glaucoma (POAG).
Optic nerve damage due to glaucoma may be identified late in the pathological course of disease in high myopic patients because of IOP tending to be in normal range. High myopic patient’s large optic disc size and have a clear well delineated rim.\textsuperscript{13}

The pathogenesis of POAG is mainly mechanical ie high IOP compresses structures and optic nerve head, disturbing the axoplasmic blood flow and excavation of optic nerve head. The other vascular theory is thought to be due to insufficient blood supply either due to high IOP or other causes like high blood pressure and vasospasm. It has been thought that optic nerve head structurally in high myopic eyes is more susceptible to glaucomatous damage due to changes in the connective tissues structures and arrangement.\textsuperscript{14} This can be related to reduce RNFL thickness in myopic eyes which may also predisposes for development of glaucoma.\textsuperscript{15}

MATERIAL & METHODS
This observational study was conducted on outdoor high myopic patients in Eye unit KDA Teaching Hospital Kohat from January 2019 to December 2019. During this period 93 high myopic patients were selected. Informed consents were taken from them after explaining the purpose, procedure and tests required for diagnosis. Out of 93 patients 74(79.56\%) were male and 19(20.43\%) were female (Table-I). Age range of the patients was from 20 to 57 years with mean age 43 years (Table-II). Proper proforma was designed for documentation of IOP, perimetry, fundoscopy (Cup-disc ratio) and Optical coherence topography. Refraction of all patients was done with auto-refractometer and then subjectively. All 93 patients were high myopic with refractive error of -6 diopter spherical and above (Table-III). Intraocular pressure was checked with air puff tonometer. Anterior segment examination was done with slit lamp. Gonioscopy was done in 9 patients whose angles were suspected to be narrow or opened. Pupils were dilated with tropicamide eye drops. Fundoscopy with direct and indirect slit lamp biomicroscopy was done for Cupped-Disc ratio. 2 patients who had high intraocular pressure and no glaucomatos cupping disc were advised OCT. Preimetry was advised to all patients with automated visual field analyser.

RESULTS
Out of 93 high myopic patients 13 (13.97\%) had glaucomatous features (Table-IV). Out of 13 glaucomatous patients high intraocular pressure more than 21 mmHg and glaucomatous field defects was observed in 13 (100\%) and glaucomatous cupped-disc was present in 11(84.61\%) patients (Table-V).

| Gender     | Number of Patients (%) |
|------------|------------------------|
| Male       | 74 (79.56)             |
| Female     | 19 (20.43)             |

Table-I. Gender distribution. Total patient 130.

| Age Group in Years | Number of Patients (%) |
|--------------------|------------------------|
| 20-30              | 15 (16.12)             |
| 31-40              | 20 (21.50)             |
| 41-50              | 53 (56.98)             |
| Above 50           | 5 (5.37)               |

Table-II. Age group. Number of patients 93.

| Refractive error in Diopter Sphericals | Number of Patients (%) |
|--------------------------------------|------------------------|
| 6-10                                 | 64 (68.81)             |
| 11-15                                | 19 (20.43)             |
| 16-20                                | 10 (10.75)             |

Table-III. Myopic refractive error. Number of patients 93.

| Profile               | Number of Patients (%) |
|-----------------------|------------------------|
| Non-Glaucomatous      | 80 (86.02)             |
| Glaucomatous          | 13 (13.97)             |

Table-IV. Profile of patients. Number of patients 93.

| Parameter                   | Number of Patients | Percentage |
|-----------------------------|--------------------|------------|
| High IOP                    | 13                 | 100        |
| Glaucomatous field defects  | 13                 | 100        |
| Glaucomatous CDR            | 11                 | 84.61      |

Table-V. Glaucomatous parameters. Number of patients 13.

DISCUSSION
In ophthalmology comorbidities are more commonly detected while dealing with a particular disorder. Therefore it is mandatory to look for
POAG is more prevalent in high myopic patients. Our study has shown a prevalence of 13.97% of POAG in high myopic patients. High myopia is being a complex trait associated with increased risk of pathological ocular complications such as cataract, glaucoma, age related macular degeneration and retinal detachment. Our results regarding high myopia being a major risk factor associated with POAG is supported by other research data and meta-analysis profoundly give strong association between high myopia and POAG. Myopic patients may have other devastating ocular co-morbidity in the form of POAG. Therefore it is of immense importance all myopic patients should be screened for POAG at frequent intervals. This will give timely addressing treatment to the concurrent co-morbidities.

CONCLUSION
The observed data being supported by other research data and meta-analysis profoundly give strong association between high myopia and POAG. Myopic patients may have other devastating ocular co-morbidity in the form of POAG. Therefore it is of immense importance all myopic patients should be screened for POAG at frequent intervals. This will give timely addressing treatment to the concurrent co-morbidities.

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