### 3.4 Normal Tension Glaucoma

**Normal Tension Glaucoma Definition**

1. Normal open angles
2. Optic disc cupping and pallor
3. Reliable CVF test and reproducible visual fields defect
4. Progressive VF defect
5. IOP between 10-21 consistently
6. Worsening glaucomatous optic neuropathy

**Baseline Essential Examination/Investigation**

**History**
- Exclude previous ischaemia/trauma/hypotensive episode (RTA/childbirth/heavy menses/stroke)
- Drug history: excluding systemic beta blocker

**Ocular Examination**
- Gonioscopy/colour vision/pupil check/phasing/CCT

**Cardiovascular**
- BMI/BP/ECG
- Full blood count/Folate/B12/renal & liver function

**Neurological**
- History and examination

**Treatment**

1. Treat any underlying contributing vascular cause
2. IOP lowering still has value
3. Set the target IOP with consideration of CCT
   - As IOP may be high at night
4. Also consider the 24-hour IOP phasing results
5. Firstline treatment: consider Prostaglandin analogue
6. Consider SLT if starting IOP>15
7. Perform trabeculectomy if glaucomatous damage is progressing despite appropriate medical therapy
8. Review 3-4 monthly

**Differential Diagnosis**

- Toxic optic neuropathy
- Optic pit
- Previous ischaemic/hypotensive event
- Previous optic neuropathy
- Slow compressive optic neuropathy
- Peripheral retinal pathology causing scotoma
- Acute zonal occult outer retinopathy (AZOOR)
- Optic disc coloboma

**Further Investigations**

If the defined indicators of non-glaucomatous optic neuropathy are present, investigate for neurological disease before treatment or progression of disease:

1. CT Scan or
2. MRI Brain and Orbits
3. Liaise for neurological opinion

**Normal Tension Glaucoma**

- Normal open angles
- Optic disc cupping and pallor
- The following noted in at least 2 visits/assessments
- Reliable CVF test and reproducible visual fields defect
- Progressive VF defect
- IOP between 10-21 consistently
- Worsening glaucomatous optic neuropathy