REVIEW OF LITERATURE
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History:

Glaucoma and cataract have affected the mankind ever since his emergence on the fact of the earth, but their true nature was not recognized by ancient Greeks and Romans. The present form of condition has evaluate only through the age of the research. The word Glaucoma first appear in hippocrates (420 B.C.) together with the Amblyopia in the list of diseases affecting old people. Glaucoma is an ancient Greeks name meaning glare such as silverness of the sky as dull sheen of an eye which has lost its brightness.

Sams ad din (1806) deschribed the glaucoma as a migrain of the eye. An illness associated with pain in the eye, hemicrania, dullness of the humour followed by dilatation of the pupil.

Cataract is also a senile problem. It may be safely said that while everyone would develop a senile cataract. If he lived long enough; so also would everyone obtain a spontaneous cure if life where sufficiently prolonged. Some time this spontaneous cure complicated by rupture of the lens capsule leads to rise in intraocular pressure.
When the intraocular pressure rises secondary to change in the morphology or pathology of the lens termed as lens induced glaucoma.

Sizly (1884) first noted the frequency with which the spontaneous cure of senile cataract is complicated by glaucoma. Reuss (1900) found that out of 34 cases of spontaneous cure of senile cataract glaucoma developed in eight and iritis or iridocyclitis in three cases. Gifford (1900) observed that 3 out of four cases had lost their vision due to glaucoma during spontaneous cures of senile cataract. Instances of this condition are cited also by Rollet and Genet (1913), Gonzaliz (1919), Daily (1933), Knapp (1937), Box and Ehrlich (1941 - 1946), Sugar (1949) and Scott (1953). Safar (1928) and Kaufman (1933) mentioned that in such cases cholesterol crystals were seen in the anterior chamber.

Smith (1891) observed that obstruction to the outflow of aqueous occur at the pupil or at the drainage angle and in many cases at both site resulting in secondary glaucoma. Erich Seidel (1920) and later on Curran (1920) advocated the idea of blockage of pupil as the cause of glaucoma. Heath (1941) said that
rise in intraocular pressure is anticipated with the rupture of the capsule and lens matter streaming into anterior chamber with the capsule intact. The lens matter in the vitreous is a well known cause of recurring iridocyclitis and associated glaucoma.

Finally Barkan (1938) with the help of improved gonioscope devided the condition into closed angle type and open angle type.

**Classification:**

Lens induced glaucoma classified as:

1. Secondary open angle lens induced glaucoma. It include phacolytic glaucoma and phacoanaphyletic glaucoma.

2. Secondary closed angle lens induced glaucoma,
   - include -
     a). Phacomorphic glaucoma in which shape of the lens changed due to swollen cataractous lens (intumescent stage) or it may be secondary to trauma.
     b). It may be associated with the dislocation of lens may be either spontaneous or traumatic, spontaneous dislocation are seen in patient with the condition such as marfan's syndrome,
homocystinuria and syphilis, subluxation is partial or complete. In trauma the lens may be partial or completely anteriorly or posteriorly dislocated.
c) Third type is glaucoma seen in the eye with spherophakia, which occur most commonly as a part of marchesani syndrome.

Pathophysiology:
Knapp (1937) suggested that irritation of the ciliary body by the bouncing lens nucleus of a margagnian cataract account for the many cases of phacogenic glaucoma. According to Heath (1941) the lens is capable of causing glaucoma through a number of routes and also that the lens structure has within itself the material to produce glaucoma directly and or indirectly. Once out of its bed, the lens become a marauder and is in effect, a foreign body within the eye.
Sugar (1949) observed that glaucoma developed in cases of spontaneous rupture of lens capsule is due to lens protein which act in three ways -
1. Chemical irritation due to toxic by-products of lens hydrolysis.

2. Increases protein content of the aqueous which tend to lessen the osmotic differential between the aqueous and the blood serum.

3. Mechanical obstruction of the trabecular spaces by lens particles affecting the aqueous outflow.

**Phacolytic glaucoma** -

Flock et al (1955) studied the pathophysiology of 138 cases and observed that lenticular degeneration is essential for the development of this type of glaucoma, liquification of the cortex may occur focally or extensive and in 62% cases the entire cortex was envolved. Degenerative changes were usually observed in the lens epithelum and capsule. Most advanced alteration were observed posteriorly where often the capsule was attenuated markedly. In others the liquified lens cortical material had apparently escaped through the unruptured capsule and could be seen over the surface of the lens and in the anterior chamber. Liquification of the lens cortex a process which may be called phacolysis is termed by Krause to be mediated by two
enzymes - protease 'A' and protease 'B'. Through their activity, large molecules of lens protein are disintegrated to small molecules, which apparently diffuse through intact though perhaps more permeable lens capsule. The presence of lysed cortical material in the posterior and anterior chamber evokes a histiocytic response. Large mononuclear phagocytes collect over the lens surface. These macrophages have a very characteristic appearance once they have become engorged with liquified lens substance, they swell up and become rounded. Their cytoplasm is distended with the finally granular, pale staining, slightly acidophilic particles of the lens material, almost identical with that still remaining within the lens. These macrophages carried by aqueous flow and become relatively more concentrated in the irido corneal angle. The intertrabecular spaces and the surface of the trabecula become filled with these cells and with free lens material present in the aqueous. These macrophages do not agglutinate or form keratic precipitate.

Flock et al (1955) found typical pathological picture in 108 (78%) cases had hypermature cataract, liquified lens substance in the posterior and anterior chamber and characteristic histiocytic response.
Irvine et al (1952) also supported the same view about the pathology of phacolytic glaucoma.

Turbid aqueous may show a cloud of punctate irididscnt opacities, they are mononuclear macrophages swollen with the lens protein granule. Goldberg (1967) aspirate the aqueous from anterior chamber through a milipore filter and demonstrate the highly characteristic phacolytic macrophages.

Phacoanaphylectic glaucoma:

Verhoeuff and Lemoine (1922) described that lens protein sensitize the eye, producing usually a severe and some time milder inflammation characterised by Invasion of the lens by polymorphonuclear leucocytes and mononuclear phagocytes. The presence of giant cells about the lens fragments in the iris and in the pupillary membrane which often formed. Deposition of conglomerate precipitate on the descemets membrane. The presence of cyclitic membrane in the protracted cases. The lens fragments in the vitreous causes a collection of pus cells in the vitreous as well as on the retina, similar to the keratic precipitate. The pathognomic finding is the combination of polymorphonuclear leucocyte, macrophages and phagocytized lens material.
Wood & Berky stated that lens substance is a weak antigen. There is evidence that certain reaction have an allergic aspect Verhoeff and Lemoine, Burky, Burky and Henten, Irvine and Irvine (1952) described that in cases with the hypermature cataract the lens substance escaping into the eye cavities produces uveitis and glaucoma, pathologically there is marked plasma cell reaction in the iris. If lens material is exuded posteriorly a marked cyclitis with plasma cells and mononuclear phagocytic cells response clouding the vitreous, and deposition of clumps of cells on the retina and on the descemet's membrane.

Phacomorphic glaucoma:

( Intumescence of the lens) Von Graefe (1869) recognised that rapid swelling of the lens frequently excites a secondary rise in the intraocular pressure. This may occur in two conditions, one is with the rapidly developing intumescent cataract of senile type and other is traumatic cataract caused either by perforating injury or by an operation of discision. The swollen lens pushes the iris forward making the anterior chamber sufficiently shallow to blocks its angle or to permit other factors such as mydriasis to do so. Priestley.
Smith (1879), Nemitz (1956) observed that it should be resemble as the primary angle closure glaucoma. There are three differences - (i) the fellow eye in the phacomorphic glaucoma frequently has an anterior chamber of normal depth, (ii) the antecedent refractive error may be of any type in phacomorphic glaucoma while in primary angle closure glaucoma hyperopia is common and (iii) the mature cataract in the phacomorphic glaucoma reduces the severity of visual symptoms.

**Displacement of the lens:**

A subluxation or luxation of lens wheather it be spontaneous or traumatic is frequently followed by development of secondary glaucoma. Brown (1865) found that glaucoma is not uncommonly associated with congenital subluxation as an isolated finding or as part of marfan's syndrome, marchesani syndrome or less commonly in homocystinuria.

In traumatic cases secondary glaucoma is more common 36 out of 70 cases, Hegner (1915); 15 out of 39 cases, H. Mc Donald and Puvnell (1957) and 6 out of 11 cases Calhaun and Hagler (1960. In anterior dislocation of lens wheather spontaneous or traumatic an immediate secondary glaucoma is much more common.
Hegner (1915) studied that glaucoma occur in 14 out of 15 cases of anterior dislocation of lens into anterior chamber. Rodman (1963) found that 34 out of 44 cases of traumatic anterior dislocation of the lens had a clinical history or pathological evidence of glaucoma. In traumatic anterior subluxation or dislocation of the lens secondary glaucoma occur due to the recession of the angle of anterior chamber, Rodman (1963), Pupillary block by vitreous or lens. Chandler (1964) has commented on the frequent occurrence of glaucoma in ectopia lentis, marfan's syndrome, marchesani syndrome and homocystinuria. Smeral (1962) and Segal (1962) found that in ectopia lentis, marfan's syndrome and marchesani syndrome, secondary glaucoma occur due to envolvement of angle of anterior chamber.

In spontaneous anterior dislocation, the lens is some time incarcerated in the pupil resulting in the pupillary block glaucoma. If the lens is completely in the anterior chamber the pupil may be blocked by iris carrying forward against the posterior surface of the lens lead to formation of extrinsic anterior peripheral synechia which hinderd the aqueous flow, Rodman (1963), Chandler (1964).
Archonodactyly, cardiac anomalies, subluxated lens, some time glaucoma characterize the marfan's syndrome. In 80% of the cases the lens is spherical in shape and dislocated upward. Microscopically the angle of such eye shows a thickend anomalous trabecular meshwork with a large number of trabecular sheets passing the scleral spur and inserting directly into the ciliary body. Increased intraocular pressure is produced by trabecular anomaly as well as dislocation of lens. Homocystinuria is associated with subluxated or dislocated lens was first described by Garson and Neill (1962) and well over 100 cases have since been reported.

In posterior dislocation of lens of traumatic origin secondary glaucoma is not so frequent, 2 out of 9 cases, Calhaun and Hagler (1960). Glaucoma occur as a result of trauma not due to dislocation of lens Rodman (1963), Chandler (1964). In spontaneous posterior dislocation, the lens usually well tolerated by eye. In those cases where hypertension occur, it is due to the vitreopupillary block, rubeosis secondary to retinal detachment, Rodman (1963). Phacoanaphylactic or phacolytic glaucoma, Chandler (1959) or coincident primary glaucoma.
In traumatic posterior subluxation or dislocation of lens glaucoma occur due to the recession of the angle of anterior chamber (30 out of 31 cases) Rodman (1963).

Microphakia or spherophakia is congenital and bilateral condition associated with skeletal changes may be complicated by glaucoma. Bowman (1865), Marchesani (1939) described a syndrome characterised by spherophakia and ectopia lentis giving rise to lenticular myopia and iridodonesis and glaucoma which is probably due to spherophakia. Spherical lens blocking the pupil leads to pupillary block glaucoma. Repeated self limiting attacks of glaucoma may ultimately result in the formation of extensive peripheral anterior synechia and permanent increase in the intraocular pressure, Gartner (1958), Zoldin (1959), Levy and Adreson (1961).

Incidence:

The incidence of phacogenic glaucoma amongst the various types of secondary glaucoma was studied by different workers as follows:
Table - 1

Shows incidence of phacogenic glaucoma in relation to secondary glaucoma

<table>
<thead>
<tr>
<th>Sl. No.</th>
<th>Scientist</th>
<th>Total no. of case studied</th>
<th>No. of case of lens induced glaucoma</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Lehrfeld and Reber (1937)</td>
<td>413</td>
<td>80</td>
<td>19.4</td>
</tr>
<tr>
<td>2.</td>
<td>Kurland and Taub (1957)</td>
<td>14</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>3.</td>
<td>Ymazi et al (1977)</td>
<td>761</td>
<td>38</td>
<td>5.0</td>
</tr>
</tbody>
</table>

Phacogenic glaucoma included, glaucoma due to the pupillary block associated with the intumescent or hypermature mongagnian cataract, phacolytic glaucoma, phacotoxic glaucoma and secondary glaucoma associated with displacement of the lens.

The incidence of lens induced glaucoma in relation to the total number of senile cataract operated was observed by various workers is given in table - 2.
Table - 2

In incidence of lens induced glaucoma in relation to total no. of senile cataract operated

<table>
<thead>
<tr>
<th>Study</th>
<th>Total no. of cataract operated</th>
<th>No. of case of lens induced glaucoma</th>
<th>Percentage</th>
</tr>
</thead>
</table>

The incidence of sex observed by various workers is given in table - 3.

Table - 3

Relationship of age & sex incidence

<table>
<thead>
<tr>
<th>Sl. No.</th>
<th>Scientist</th>
<th>Average age (years)</th>
<th>Total no. of case studied</th>
<th>No. (%) of male</th>
<th>No. (%) of female</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Flock et al (1955)</td>
<td>70</td>
<td>138</td>
<td>82 (59.43%)</td>
<td>56 (40.57%)</td>
</tr>
<tr>
<td>2</td>
<td>Jain I.S. et al (1982)</td>
<td>62</td>
<td>86</td>
<td>40 (46.57%)</td>
<td>46 (53.49%)</td>
</tr>
<tr>
<td>3</td>
<td>Dhar G.L. et al (1984)</td>
<td>65.5</td>
<td>214</td>
<td>93 (43.46%)</td>
<td>121 (56.54%)</td>
</tr>
</tbody>
</table>
Flock et al (1955) observed that male sufferers 59.43% were dominating over females 40.57%. In further studies Jain et al (1982) and Dhar et al (1984) found that females are outnumbered the males.

Clinical feature:

Lens induced glaucoma is characterized by the violent secondary glaucoma (resemble acute angle closure glaucoma) in the one eye with the senile mature cataract, hypermature senile cataract (rarely intumescent senile cataract) yet with an open angle. Normal intraocular pressure and open angle in the other eye and a prompt relief of symptoms and restoration of vision after cataract extraction in the affected eye.

Symptoms and signs:

All of the patient have seriously impaired vision prior to the onset of acute glaucoma. The second group of symptoms are related to the onset of glaucoma, which in most cases was sudden and varied little from the well known picture of acute congestive glaucoma. Ocular and periorbital pain, headache of varying severity, nausea, vomiting and prostration. The eye was usually congested and shows corneal oedema, aqueous flare, fixed often dilated pupil and shallow anterior chamber or
deeper anterior chamber, may be subluxation of lens, raised intraocular pressure and cataractous lens.

Hypermature cataract were seen in only 83 (39.0%) cases, mature intumescent cataract in 126 (58.5%) cases and immature cataract in 5 (2.5%) cases. Mean intracameral pressure in the affected eye was 36.6 mm Hg + 7.4 mm Hg. The highest recorded tension 60.3 mm Hg and lowest was 26.5 mm Hg. Schiotz. The other eye invariably was quite with sphakia in 96 cases, immature cataract in 64 cases mature senile cataract in 38 cases and hypermature senile cataract in 16 cases.

Socio - economic status:

Srivastava, R.N. devided the persons socio-economically on account of percapita income. Person having per capita income Rs. 300 - 600 or above categorized into upper class Rs. 139 - 299 in middle class and bellow Rs. 139 in lower class.

Management:

According to Dhar et al (1984) first of all intracameral pressure should be controlled by acetazolamide osmotic agent like oral glycerol, 20% mannital (i/v) and timolol eye drop in different combination alongwith
local antibiotic drop. Surgical treatment was carried out as quickly as possible after an initial medical therapy. Cataract extraction was performed in single stage along with the peripheral iridectomy or other filtering operation, Heath (1941), Sugar (1944), Jain et al (1982), Dhar et al (1984).

**Drug review:**

Different drugs used to reduce the intraocular pressure.

**Acetazolamide:**

It is a carbonic anhydrase inhibitor. It reduces the production of aqueous by about 50% (Backer and Hay (1958); Draeger et al (1963)). It is given orally in the dose of 125 - 500 mg. one to four times a day and after single dose its action is apparent in 60 - 90 minute, reach a maximum in 3 - 5 hours and wearoff in about 12 hours. Sustained action capsule of the drug have a more prolong effect did not be given more than twice a day (Stepanic, 1967).
Osmotic agent:

These substances raised the osmolarity of the plasma so that fluid withdrawn from the eye resulting in fall of intraocular pressure. Movement of the ocular fluid is established when there is definitive concentration gradient, Galin et al. (1959).

- Various indications for uses of osmotic agent
- Angle closure glaucoma
- Secondary glaucoma (Hypermature, phacolytic glaucoma.
- Preoperative

Urea:

First used osmotic agent Adler (1933), it induces marked hypotony Aizawa (1962).

Mannitol:

According to Galin et al. (1963), it has less side effect than urea. More potent hypotensive agent than urea Seeger and Lewis (1964), it is used intravenously.

Different osmotic agent used are given in table with their route of administration and doses.
Table-4

Shows different osmotic agent with their route of administration and dose

<table>
<thead>
<tr>
<th>Name</th>
<th>Route of administration</th>
<th>Dose</th>
</tr>
</thead>
<tbody>
<tr>
<td>Glycerol</td>
<td>Oral</td>
<td>1-1.5gm. 1 kg.</td>
</tr>
<tr>
<td>Ethylalcohol</td>
<td>Oral</td>
<td>0.1-1.5gm. kg.</td>
</tr>
<tr>
<td>Isosorbide</td>
<td>Oral</td>
<td>1gm. kg.</td>
</tr>
</tbody>
</table>

Side effects:

Dehydration of body cause, headache, pain in the back, mental confusion, disorientation, Tarter and Linn (1961), Becker (1967).

Diuresis is enhanced markedly with mannitol and they must be used with caution in patient with the cardiac, renal and hepatic diseases.

Betablockers:

As early as 1967 Philips, C.I., Howitt, G. and Rowland, D.J. introduced propranolol into glaucoma therapy. However because of its mild anaesthetic properties, have made many investigators reluctant to use it as a topical medication for glaucoma.
Hall et al (1970) describe a new beta adrenergic blocking agent timolol. It blocks both beta_1 and beta_2 receptors. Timolol has neither sympathomimetic effect nor anaesthetic properties Fitz Gerald J.D. (1971). The absence of local anaesthetic activity appears to make timolol a more reasonable choice for local use in long term therapy. In animal experiments, Hall R.A. et al (1970), Scribner A. (1973), it is proved that it has 5 - 6 time greater activity than propranolol. It is levo isomer which is usually employed. Kat's and his associates (1976) reported single eye drop study uses 0.5% and 1% and 1.5% timolol ophthalmic solution in 15 normal volunteers.

Intraocular pressure were decreased significantly in comparison to 15 control. No side effect were observed, in particular, there was no ocular irritation, no alteration in the pupillary size and no change in the visual acuity. Zimmerman and Kaufman (1977) conducted a single eye drop study on 30 patients with glaucoma and found significant lowering of intraocular pressure with timolol drops. A 50% reduction in the intraocular pressure was estimated when pressure reading at seven hours after the eye drops were compared with the pre-treatment level.
They also conducted a dose response analysis to a single eye drop in 20 glaucoma patients. They concluded that maximum effect was achieved by a concentration of 0.5%. They also noted a prolong duration of action still present at least 24 hours after the eye drops. Timolol was used and found to be much effective as compared to pilocarpine. The result of William P., Boger et al (1978) also confirmed these findings.

**Treatment of phacolytic glaucoma:**

First of all lower the intraocular pressure by giving carbonic anhydrase inhibitor and osmotic agent then performed surgery. Robert H. et al (1964) studied that this glaucoma is misdiagnosed as angle closure glaucoma and iridectomy was performed. Flock's and co-workers pointed out that sudden onset and symptomatology are often very similar to those of acute angle closure glaucoma. This probably was the reason for iridectomy in these cases. During operation ciliary body was torn and there was haemorrhage into anterior and posterior chamber. In fact red blood cells as well as the product of breakdown erythrocytes acting in the concert with macrophages attached by the escaped lens material, produced further mechanical blockage and aggravate the glaucoma.
Irvine and Irvine (1952) suggested that curability of this condition by removal of the lens. Flock and co-workers (1955) stated that after delivery of the lens the anterior chamber should be irrigated in an effort to remove as much as morgagnian fluid and as many macrophages as possible. Dhar (1984) in his study of 214 cases initially controlled the intraocular pressure by 20% mannitol and glycerol (orally). Diamox and or timolol in different combination with the local antibiotic drop. After that performed surgical procedure, cataract extraction alongwith the peripheral irridectomy (single stage) operation in 210 cases and in 4 cases surgery was carried out in two stage a preliminary peripheral irridectomy followed 2 weeks after cataract extraction.

**Phaco anaphylectic glaucoma:**

In this case corticosteroid therapy is usually minimally effective. Cure of the condition depends on recognition and extraction of all lens material
Intumescence of the lens:

In this intraocular pressure reduced by medical means such as carbonic anhydrase inhibitor. Osmotic agent and when tension was reduced to normal level lens is removed by extraction (in intrumescent stage) or curetteevacuation or aspiration (in traumatic cataract).

Jain I.S. et al managed 86 eyes of this type of glaucoma. He controlled the intraocular pressure by medical means and then intracapsular cataract extraction was done in 49 (57%) eyes. Planned extracapsular cataract extraction in 9 eyes and combined extraction with trabeculectomy in 9 eyes.

Dislocation of lens:

In spontaneous subluxation or luxation, treatment of choice is extraction of the lens. In homocystinuria an anteriorly dislocated lens producing an acute glaucoma. The dilemma is whether to extract the lens or to coax it back through the pupil in the hope that subsquent miosis will prevent recurrent dislocation.
Clarke (1939) argued that in anteriorly dislocated lens, the lens extraction was justified. Chace (1945) reported the result of operating upon four cases of congenital bilateral subluxation of lens but concluded that the result in all cases were unsatisfactory. Chandler (1964) deplored the practice of extracting the dislocated lens and advocated for a peripheral iridectomy to eliminate the pupillary block in forward movement of the lens. Speath and Barber (1965), Thomas, Hollowell Peter, Cargell and Lester (1966) and Gardon, Carstan Hart and Pollitt (1979) reported the extracting anteriorly dislocated lens in patient with the homocystinuria vitreous was invariably lost. Johnston (1968) described the removal of 6 lenses from the patient with the homocystinuria.

Rahman (1971) remove the lens in patient of secondary glaucoma due to anterior dislocation of lens. Elkington (1973) in his study gave openion that an anteriorly dislocated lens in a patient with the homocystinuria should be managed medically, when ever possible. If the lens can not be replaced behind the iris by medical means, it should be reposited under general anaesthesia and peripheral iridectomy performed. In a child or young
audult would it appear resonable to extract the lens. In traumatic dislocation the probability that the lens will rapidly become catarctous and required extraction.

SpheroPhakia:

For this type of glaucoma the treatment is difficult. The condition usually paradoxical in that the use of miotics may lead to the rise in the tension (inverse glaucoma), Urbanick (1930), Robert (1953), which can be reversed by mydriatics. Extraction of the lens generally by means of vectis has frequently been advocated but has not always lead to relief. Needling of a spherophakic lens does not lead to absorption. Jack Levy and Anderson (1961) studied and found that iridectomy. Abextetration performed at an early stage in the filtration angle is appear to be simple and good procedure. Support of this view by Rosenthol and Kloepfer (1956). Once the angle of anterior chamber closed some form of drainage operation is necessary ( iridenclesis or cyclodialysis ).

The complication noted by Dhar G.L. et al (1984) are - Corneal haze, Hyphema ( Post operative ), Shallow anterior chamber, Rupture of the lens capsule, Vitreous prolapse and Hazy media.
Visual prognosis:

Jain I.S. et al (1982) observed that eyes tend to withstand raised intraocular pressure for a longer period than expected and observed that visual prognosis in the lens induced glaucoma depend upon the time interval between the onset of acute attack and starting of treatment and found the visual prognosis as following.

Dhar G.L. et al (1984) in his study observed the visual prognosis as follows:

Table - 5

Showing the visual acuity among the operated cases of lens induced glaucoma

<table>
<thead>
<tr>
<th>Sl. No.</th>
<th>Scientist</th>
<th>6/18 or more</th>
<th>No.</th>
<th>%</th>
<th>6/24 or less</th>
<th>No.</th>
<th>%</th>
<th>HM PL No.</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Jain I.S. et al</td>
<td>54</td>
<td>(62.8%)</td>
<td>20</td>
<td>(23.3%)</td>
<td>12</td>
<td>(13.9%)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>(1982) (86 cases)</td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td>Dhar G.L. et al</td>
<td>169</td>
<td>(79.0%)</td>
<td>36</td>
<td>(16.8%)</td>
<td>09</td>
<td>(04.2%)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>(1984) (214 cases)</td>
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