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RESEARCH ARTICLE

COMPARATIVE STUDY ON POST OPERATIVE VISUAL OUTCOME AFTER SICS BELOW AND ABOVE 60 YEARS IN A TERTIARY CARE HOSPITAL

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Abstract

Aim: Purpose of this study is to evaluate the visual outcome and various factors associated with visual outcome after SICS in above 60 and below 60 years age group patients.

Methods: It is a prospective study done over a period of 2 months from May to June 2022 .A group of 200 patients of which 100 patients above 60 years and 100 patients below 60 years with cataract and BCVA <6/36 are selected. All of these patients underwent thorough anterior and posterior segment examination andall necessary investigations are done. All of these patients underwent SICS at tertiary care hospital, GGH, Kakinada and visual outcome of these patients are noted.

Results: Outof 200patients studied,100 in each group most of the patients achieved a final BCVA of 6/18 in 34% of cases, followed by 6/24 in 20% of cases and <6/60 visual outcome is seen in 6% of cases in above 60 years age group. About 100 cases in below 60 years age group, most of the patients achieved a final BCVA of 6/12 in 25% of cases followed by 6/18 in 20% of cases and <6/60 visual outcome is seen in 5% of cases.

Conclusion: Eventhough various systemic&ocular pathologies associationsare more common above 60 years , the final visual outcome of these patients are reasonably good & it helped a lot to enable them to perform regular activities.

Introduction:-

Cataract is the most common cause of blindness in the world. Cataract surgery is the most common procedure done and cataract blindness is reversible by this surgery.Most of the burden of visual acuity loss due to cataract is seen in elderly people Normally in above 60years age group patients providing health care facilities are difficult as they are dependent & neglected and also had various systemic & ocular associations, so visual outcome in these patients is challenging.

During covid times because of inadequate & non availability of ophthalmic OT services, these problems are much increased.Because of bilateral cataract, patients can't be able to do their daily routine works, leading to decreasing in the quality of life of patients.

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Good, uncomplicated surgery is necessary for attaining the good visual acuity after cataract surgery .Government of andhrapradesh has launched many projects like kantivelugu scheme &avvatatha programme to provide cataract surgery at free of cost for old age people especially belonging to low socioeconomic group.

These schemes helps in decreasing burden of blindness due to cataract & also helps in improving the quality of life of avvatatha. Even though cataract is more common in above 60 years age group , cataract can also occur in below 60 years age group.

In this study efforts are made to evaluate the visual outcome and various factors associated with visual outcome after cataract surgery in below 60 and above 60 years age group.

Aim:

Purpose of this study is to evaluate the visual outcome and various factors associated with visual outcome after SICS in above 60 and below 60 years age group patients.

Methods:-

It is a prospective study done over a period of 2 months from May to June 2022 .A group of 200 patients of which 100 patients above 60 years and 100 patients below 60 years with cataract and BCVA <6/36 are selected. All of these patients underwent thorough anterior and posterior segment examination using slit lamp bio microscopy, direct and indirect ophthalmoscopy. All necessary investigations like keratometry, A-Scan, B-Scan, IOP, Syringing, Xylocaine sensitivity testing, Blood pressure, Random blood sugar are done and if necessary additional investigations are done. All of these patients underwent SICS at tertiary care hospital, GGH, Kakinada and visual outcome of these patients are noted. These patients were given steroid, antibiotic eye drops post operatively and followed for 6 weeks and best corrected visual acuity is noted.

Results:-

Age wise distribution:

Table 1:- Above 60 years age group.

Age in years	Number of cases	Percentage
61-65	66	66%
66-70	17	17%
71-75	10	10%
76-80	5	5%
81-85	2	2%

Maximum number of subjects were in the age group of 61 -65
Minimum number of subjects were in the age group of 81-85

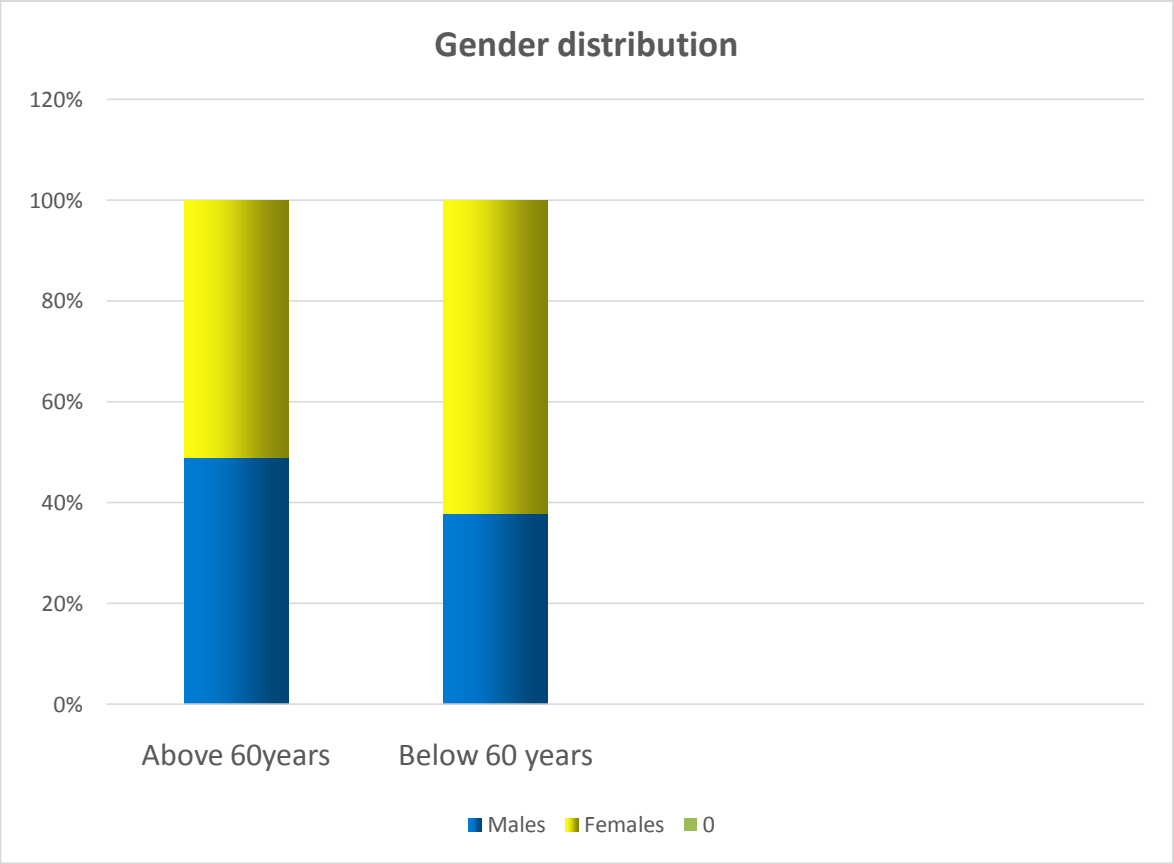
Table 2:- Below 60 years age group.

Age in years	Number of cases	Percentage
36-40	11	11%
41-45	17	17%
46-50	25	25%
51-55	21	21%
56-60	26	26%

Maximum number of subjects in below 60 years age group were in 56-60 years
Minimum number of subjects in above 60 years age group were in 36-40 years

Table 3:- Gender wise distribution:

Gender	Above 60 years	Below 60 years
Males	49%	38%
Females	51%	62%

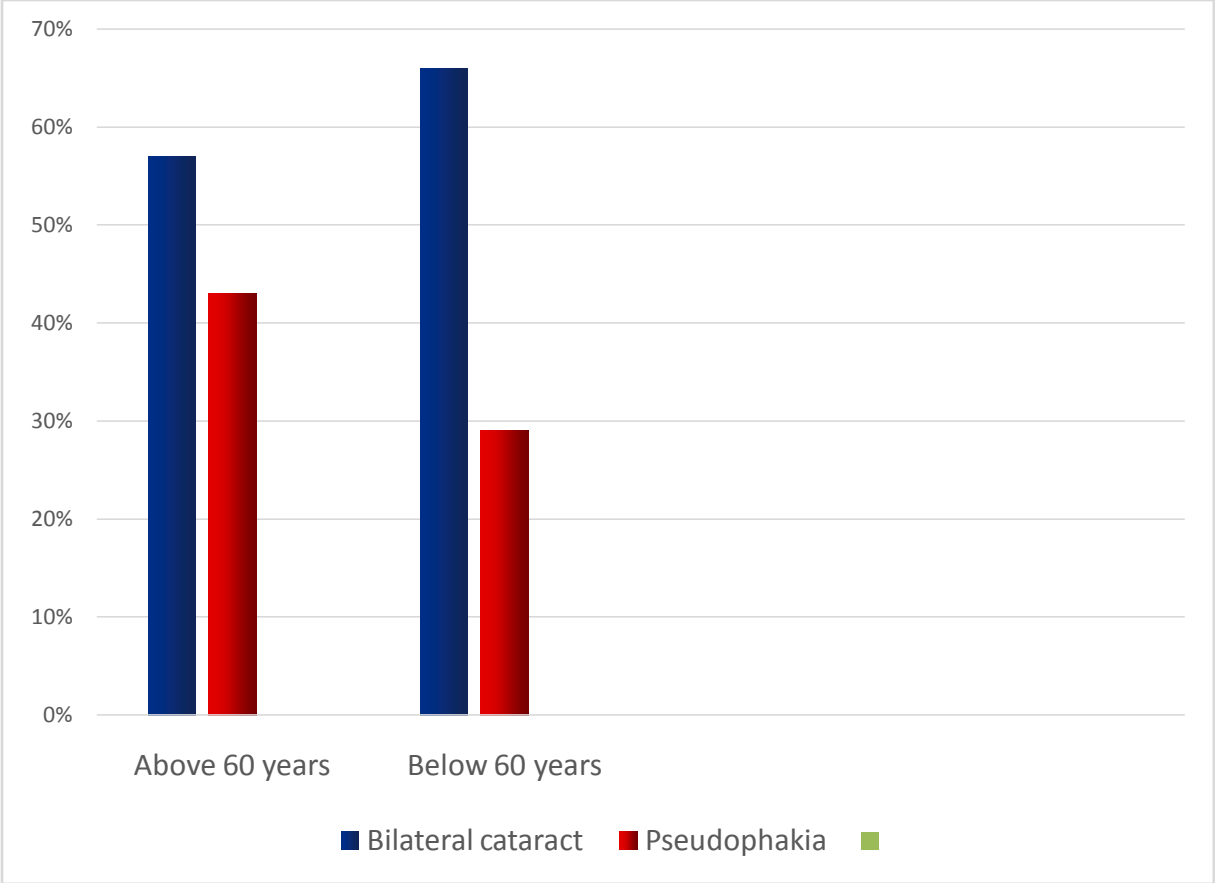


Above 60 years age group in this study males and females are about 49% & 51% respectively

Below 60 years age group in this study males and females are about 38% & 62% Respectively

Table 4:- Incidence of bilateral cataract and pseudophakia.

	Above 60 years	Below 60 years
Bilateral cataracts	57%	66%
Pseudophakia	43%	29%



Above 60 years age group in this study, bilateral cataracts and pseudophakia are seen in 57% & 43% respectively

Below 60 years age group in this study, bilateral cataracts and pseudophakics are 66% & 29% respectively

Table 5:- Type of cataract:

Type of cataract	**Above 60 years**		**Below 60 years**	
	Unilateral	**Bilateral**	**Unilateral**	**Bilateral**
Mature cataract	14(14%)	7(7%)	6(6%)	2(2%)
Hyper mature cataract	1(1%)	1(1%)	1(1%)	0
IMSC	24(24%)	12(12%)	28(28%)	23(23%)
Nuclear cataract	27(27%)	13(13%)	18(18%)	9(9%)
PSCO	19(19%)	5(5%)	20(20%)	9(9%)
Traumatic cataract	0	0	2	0

Above 60 years age group in this study in unilateral and bilateral cases, majority of patients had nuclear cataract and least number of patients had hyper mature cataract

Below 60 years age group in this study in unilateral and bilateral cases,majority of patients had IMSC and least number of patients had hyper mature cataract in unilateral cases.

Table 6:- Systemic associations.

Systemic associations	Above 60 years	Below 60 years
Hypertension	40	32
Diabetes mellitus	20	15
HIV	-	8
HBS Ag	-	3
Asthma	4	1
CAD	1	-
CVA	-	1
CKD	1	-
Hypothyroid	-	1
Parkinson disease	2	-
Total number of cases	68	60

Total number of systemic associations found was 68 % in above 60 years age group
Total number of systemic associations found was 60% in below 60 years age group

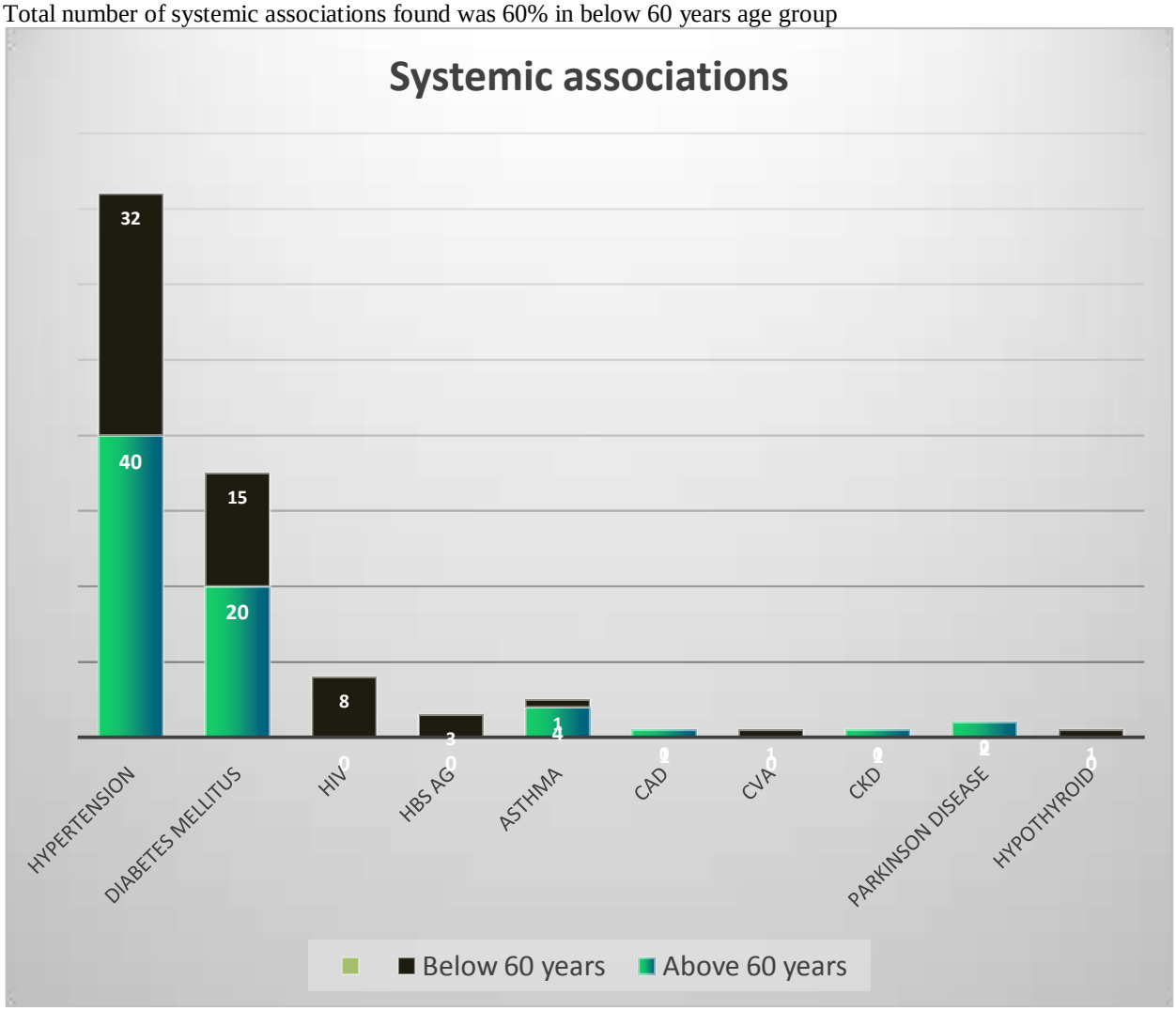


Table 7:- Anterior segment pathologies.

Anterior segment pathology	Above 60 years(n=100)	Below 60 years(n=100)
Corneal opacity	4	3
Corneal degeneration/ dystrophy	2	2
RAPD	2	-
Shallow AC	3	1
Pseudo exfoliation	8	4
Iris atrophy	2	1
Synechiae	5	2
Lagophthalmos	1	1
Raised IOP	2	2
Ectropion	-	1
Ptosis	-	1
Total	29	18

Total number of anterior segment pathologies associated in above 60 years and below 60 years age group was 29% and 18% respectively.

Table 8:- Posterior segment pathology.

Posterior segment pathology	Above 60 years (n=100)	Below 60 years(n=100)
Temporal pallor	11	5
ARMD	5	2
Glaucomatous cupping	4	3
Optic disc pallor	2	-
Asteroid hyalosis	1	-
PVD	1	1
Macular scar	-	2
Posterior staphyloma	-	1
Optic nerve head drusen	-	1
Total	24	15

Total number of posterior segment pathologies associated in above 60 and below 60 years age group was 24% and 15%

Table 9:- Post operative complications.

Post op complications	Above 60 years	Below 60 years
Striate keratopathy	11	8
Corneal oedema	4	3
Iris prolapse	2	1
Posterior capsule tear	1	2
Primary PCO	1	1
Total	19	15

Total number of post operative complications seen in above 60 years and below 60 years age group was 19% and 15% respectively.

Table 10:- Post op vision.

Post op vision(BCVA)	Above 60 years(n=100)	Below 60 years(n=100)
6/6	5	8
6/9	9	14
6/12	8	25
6/18	34	20
6/24	20	13

6/36	11	9
6/60	7	8
<6/60	6	3

About 100 cases in above 60 years age group,most of the patients achieved a final BCVA of 6/18 in 34% of cases, followed by 6/24 in 20% of cases and <6/60 visual outcome is seen in 6% of cases.

About 100 cases in below 60 years age group, most of the patients achieved a final BCVA of 6/12 in 25% of cases followed by 6/18 in 20% of cases and <6/60 visual outcome is seen in 5% of cases.

Discussion:-

Current study included 200 patients(100 patients above 60years &100 patients below 60 years) randomly who underwent SICS at GGH,Kakinada.

Above 60 years age group,maximum number of subjects were in the age group of 61-65 in 66% of cases which was similar to Pai SG et al study and minimum number of subjects were in the age group of 81-85 in 2% of cases.

Below 60 years age group,maximum number of subjects were in the age group of 56-60 in 26% of cases which was similar to markos et al study and minimum number of subjects were in the age group of 36-40 in about 11% of cases.

Mean age group in this study for above 60 years age group was 66 years and for below 60 years, it was 49.7 years.
Among gender wise incidence in both the groups females out numbered the males in about 62% and 51% in below and above 60 years age group respectively similar to markos et al study.

Bilateral cataract cases are seen in about 57% and 66% in above and below 60 years age group and Pseudophakia seen in about 43% and 29% of cases in above and below 60 years age group respectively.In above 6o years age group when compared to below 60 years age group pseudophakia are more and bilateral cataract was less may be because in below 60 years age group cataract grade was not that much severe,so need of surgery for early stages of cataract. In above 60 years age group, most of the patients already one eye cataract surgery was done,so pseudophakia cases are more seen in this age group.

Nuclear cataract is most common type of cataract seen in unilateral and bilateral cases in above 60 years age group similar to Pai SG et al study and IMSC is the most common type of cataract seen in unilateral and bilateral cases in below 60 years age group in this study.

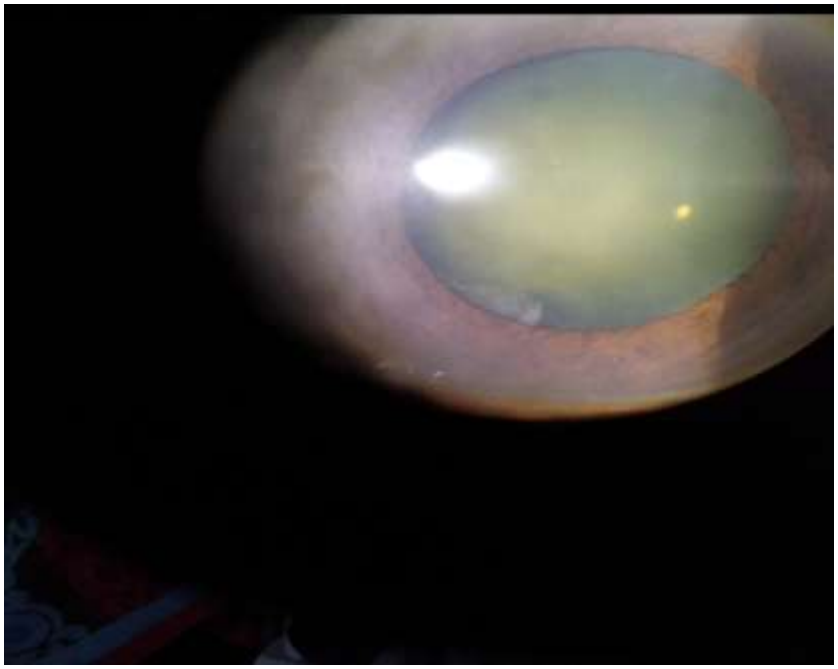


Image of patient eye showing IMSC

Hyper mature cataract is least common type of cataract seen in above and below 60 years age group in this study.

Out of 100 cases studied in each group,68% and 60% of cases had systemic associations in above 60 and below 60 years age group respectively.

Hypertension is the most common systemic association found in above and below 60 years age group in about 40% and 32% of cases respectively followed by diabetes mellitus in about 20% and 15% of cases in above and below 60 years age group respectively similar to markos et al study.

HIV and HBS Ag cases associations are seen in about 8% and 3% of cases in below 60 years age group and no associations of these cases seen in above 60 years age group may be because HIV and certain drugs used in treatment of HIV are responsible for early and accelerated cataract changes in lens and also because of decreased survivality of these patients.

Bronchial asthma cases are seen in about 4% and 1% in above and below 60 years age group which was almost similar to markos et al study.

Out of 100 cases studied in each group,29% and 18% of cases are associated with anterior segment pathology.

Majority of them are associated with pseudo exfoliation in about 8% and 4% of cases in above and below 60 years age group respectively similar to markos et al study.

Corneal opacity was seen in about 4% and 3% of cases in above 60 and below 60 years age group respectively and in all of these cases opacities are found in peripheral zone of cornea and so visual outcome is reasonably good for these patients.Corneal degenerations or dystrophies seen in 2 cases in each group,these cases intra operative measures like excessive use of viscoelastics to coat the corneal endothelium taken to prevent the corneal touch as much as possible and surgery also completed early for these patients. Above 60 years age group, 2

patients had RAPD and on posterior segment examination found to have optic atrophy, these patients are posted for surgery under GVP and visual outcome of these patients are <6/60.3 Cases of above 60 years age group and 1 case of below 60 years age group had shallow AC,gonioscopy and IOP was normal in these patients and post op vision also good for these patients.

Image showing Pseudo exfoliation over anterior lens capsule

Pseudoexfoliation was seen
in 12 cases total 8 and 4 cases in above and below 60years age group,out of which 3 cases had 40% dilatation,sphincterotomy was done for these cases and further steps are managed accordingly,5 cases had 50% dilatation,intra cameral adrenaline is given for these patients and further steps are done.Remaining cases dilatation was 70%,these cases are managed with viscodilatation.Posteriorsynechiae was seen in 7 cases,out of which 5 and 2 cases are seen in above and below 60 years age group, using viscoelasticssynechiae was broken and during nucleus prolapse also measures like using excessive pressure is avoided to prevent posterior capsule tear.Lagophthalmos was seen in 2 cases,1in each group,lateraltarsorraphy is done for these patients after cataract extraction.Raised IOP was seen in 2 cases in each group,IOP was mildly elevated and mature cataract was seen in these patients,after surgery,posterior segment details are seen like cupping which was of 0.6 CDR in all of the cases and these patients further tests like visual fields are done after surgery.Ptosis was seen in 1patient,which was mild degree and senile ptosis and visual outcome of these patients are also reasonably good.Even though various anterior segment pathologies are associated in these patients visual outcome of these patients are reasonably good which is possible by taking appropriate measures.

Total number of posterior segment pathologies associated in above and below 60 years age group was 24% and 15% respectively more in above 60 years age group. Temporal pallor is the most frequently associated posterior segment pathology associated in both the groups more in above 60years when compared to below 60 years age group.Most of these patients had a history of tobacco or alcohol intake. After temporal pallor,ARMD is the most frequent posterior segment pathology associated in above 60 years age group,while in below 60 years age group glaucomatous cupping is the most frequent posterior segment pathology associated

after temporal pallor. BCVA of these ARMD patients had a visual outcome of 6/36-6/24 mostly.Glaucomatous cupping is seen in 4% and 3% of patients each in above and below 6o years age group respectively,more in above 60 years age group when compared to below 60 years age group and visual outcome of these patients is not much affected.This glaucomatous cupping was observed after surgery of mature cataract and all of these cases had a 0.5 to 0.6 cupping,no rise in IOP,further evaluation is done for these patients and managed accordingly. Optic disc pallor was seen in 2 cases of above 60 years age group and these patients had a visual outcome of <6/60. Macular scar was seen in 2 cases in below 60 years age group and 1of these patient it was observed after surgery of mature cataract and 1 for patient surgery was done under GVP. PVD was seen in 1 case in each group and these patients had mostly 6/60-6/36 BCVA.Posteriorstaphyloma was seen in 1case in below 60 years age group and this patient achieved a visual outcome of 6/36.Optic nerve head drusen was seen in 1 patient in below 60 years age group and visual outcome of this patient was 6/18.

Out of 100 cases studied in each group, about 19 and 15 cases are having post operative complications in above and below 60 years age group patients respectively.Striate keratopathy is the most frequent post operative complications seen after cataract surgery in above and below 60 years age group in about 11 and 8 patients respectively.These striate keratopathy was mostly grade 1 and 2 and resolved with treatment. After striate keratopathy, corneal oedema Is the most frequent post operative complication occured in about 4% and 3% of cases in above and below 60 years age group respectively .These patients are managed with frequent instillation of steroid drops.Iris prolapse is seen in about 2% and 1% in above and below 60 years age group respectively and for these patients iris repositioning is done and sutures are kept.Posterior capsule tear occured in 2 and 1 patient in above and below 60 years age group respectively,for 1patient PC tear involving only 1 clock hour, IOL is kept on remaining posterior capsule and for remaining 2 patients IOL kept in ciliary sulcus.Post operatively IOL is stable and vision is good for these patients .Primary PCO occured in 1 case each in both the groups.All the patients are followed up post operatively for 4weeks with prescription of steroid and antibiotic eye drops combination.

Out of 100 patients studied in above 60 years age group,most of the patients achieved a BCVA of 6/18 in about 34 % of cases in above 60 years age group ,followed by 6/24, 6/36 BCVA in 20% and 11% of patients respectively. About 5% of patients achieved a BCVA of 6/6.About 6% of the patients achieved a visual outcome of <6/60, out of 6 patients 2 patients had a optic disc pallor,2 patients had a temporal pallor,1patient had a severe SK and 1patient had a severe corneal oedema.

Against the rule astigmatism was found in about 35% and 25% of patients in above and below 60 years age group respectively.

Out of 100 patients studied in below 60 years age group,mostof the patients achieved a BCVA of 6/12 in 25% of the patients followed by 6/18, 6/9 in 20% and 14% of the patients respectively.

Post operative case of cataract surgery

About 8% of the patients achieved a visual outcome of 6/6.About 3 patients had a BCVA of <6/60,out of which 2 patients had a macular scar,1patient had a temporal pallor.

About 76% and 80% in above and below 60 years group achieved a BCVA of more than or equal to 6/24 which was similar to madhumita et al study.

Conclusion:-

A thorough pre operative evaluation,goodcounselling,careful surgery & good post operative follow up is necessary to give good visual outcome.

Even though various systemic & ocular associations are more common above 60 years , the final visual outcome of these patients are reasonably good & it helped a lot to enable them to perform regular activities.

Various government projects like kantivelugu and avvatatha scheme in andhra pradesh definitely helped the avvatatha& it is a really boom for old people.

These schemes are a gift for avvatatha, as it improved the quality of life of avvatatha& enlighten their lives.

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Nil.

Conflicts of interest:
There are no conflicts of interest

Ethical issues:
Approved by ethics committee

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