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RESEARCH ARTICLE

A CLINICAL STUDY OF OCULAR CAUSES OF HEADACHE

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Abstract

Aims : To enumerate the Ocular causes of headache.

Objectives:

1. To assess the various Ocular manifestations in patients with headache.
2. To study the various causes of headache and early diagnosis of various causes of headache
3. To assess the severity of Ocular manifestations in patient who present with headache

Materials and Methods: This was a Hospital based cross sectional study done on patients who attended to OPD with a chief complaint of headache, Dr. R.S.P.R Government Regional Eye Hospital, Andhra Medical College, Visakhapatnam from August 2021 to August 2022. Relevant detailed history and Ocular examination was done.

Results: Out of 100,35(53.9%)has Refractive errors,10(12.8%)has Convergence insufficiency,14(17.95%)has Accommodative insufficiency,7(9%)has Heterophorias,1(1.3%)has Heterotropias,5(5%)has Systemic diseases. Majority were in the age group between 21-30yrs(31%)in which 13% males,17% females and least are under 0-10 and 61-70 years(3%). 52(52%)had Eye strain,10(10%)had Photophobia,12(12%)had Raised IOP, 10(10%)had Nausea,5(5%)had Frequent blinking, 5(5%) had Vertigo,3(3%)had diseases of External eye and adnexia2(2%) had Scalp tenderness 1(1%) had Photopsia and 1(1%)Iatrogenic.

Conclusion: Early detection and management of Refractive errors and Accommodative squint and distinguishing the other causes of headache like migraine, sinusitis, and systemic diseases like hypertension and benign tumours.

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Introduction:-

Headache is probably the most common ailment of mankind . the term headache or cephalgia includes pains located in head and unpleasant sensations in cranial vault and facial pains. There are only few individuals who literally seem

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incapable of experiencing headache, but many persons are familiar with the headache associated with common cold in the head, a stressful journey,(or) psychological mood fluctuations. It may be as painful as toothache or as malignant as a brain tumor. According to wolf , headache always means something wrong in the body.

Headache is defined as pain experienced in and around the cranial vault and facial pain is in majority of cases it is referred pain and the mechanism are all subsurface. They include intra cranial or extra cranial traction, pressure , displacement (or) dilation of vessels, inflammation, sustained muscle contraction and metabolic disturbances ranging from hypothyroidism to hangover.

Although it is popularly believed that ocular dysfunction (or) disease are common causes of headache , in majority of cases a patient who presents with headache as his chief symptom is rarely found to have any ocular conditions to which headache is attributed . there is popular notion that is prevailing in society , that all persons should undergo ophthalmic examination for headache. This is the reason why , many patients will approach ophthalmologists for headaches. So ophthalmologist must be familiar with not only the ocular causes of headache , but also other diseases associated with headache.

There are grossly 3 groups of persons who suffer with headaches.

In First group , the headache is an accompanied symptom in inflammatory disease of eye and ocular adnaxia. For its diagnosis, there will not be much difficulty in diagnosis because the science will be visible by systemic examination.

In Second group of Headache , there will be only symptoms , for its underlying pathology , careful examination and investigations like refraction, tonometry may be needed . the conditions which fall in this group are Astigmatism , Presbyopia , Hypermetropia, Accommodation insufficiency, Impaired convergence .

In the Third group some systemic underlying disorders may lead to referred pain to eye. Some of the conditions which fall under this category are Cavernous sinus thrombosis, Pituitary tumor, Diabetic 3rd nerve palsy,etc.

In this context every effort has been made here to Evaluate the various ocular causes of headache and their distribution, periodicity, age incidence and analysis has been made.

Materials And Methods:-

This was a hospital based cross sectional study done on 100 patients who are attended to OPD with chief complaint of headache, Department of Ophthalmology, Dr. R.S.P.R Government regional eye hospital, Andhra medical college, Visakhapatnam from August 2021 to August 2022. Relevant detailed history and ocular examination was done. Institutional ethics committee approval was obtained before the start of the study. Written informed consent was taken from each patient before inclusion into the study. A detailed clinical history pertaining to Characteristic features of headache and associated symptoms, decreased vision and cataract surgery was taken. Detailed ophthalmic examination like visual acuity testing with snellen chart, examination of anterior segment of eye with slit lamp biomicroscopy, fundus examination with direct and indirect ophthalmoscopy, measurement of intraocular pressure by applanation tonometry was done.

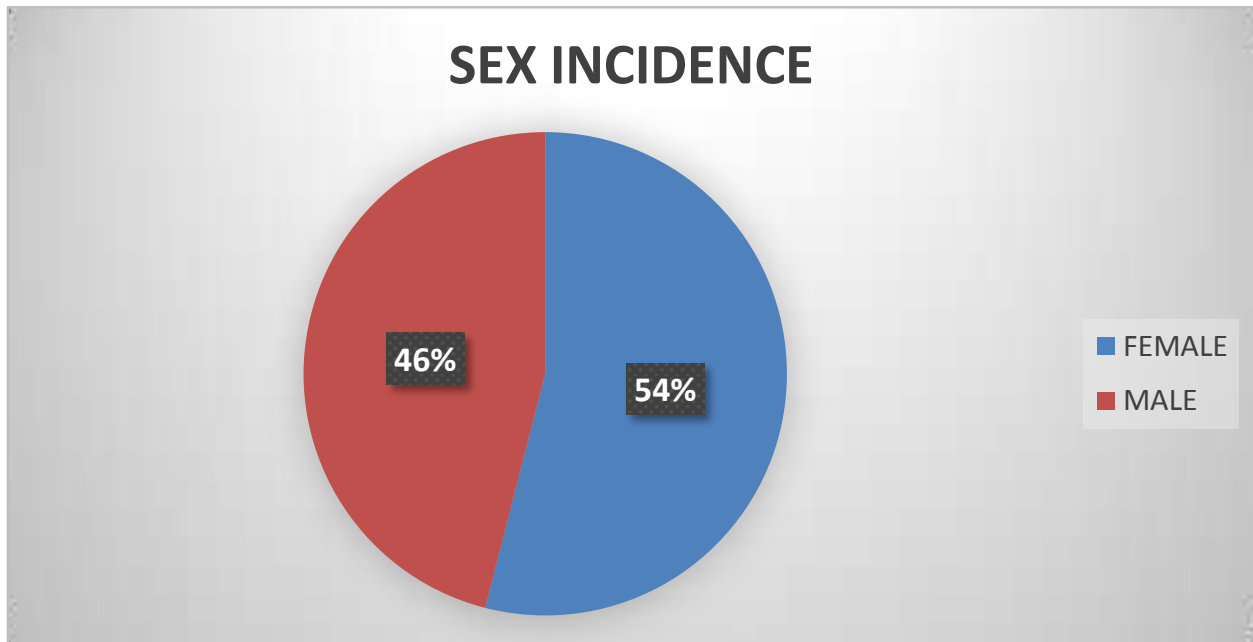
Results:-

Sex Incidence Of Ocular Causes Of Headache

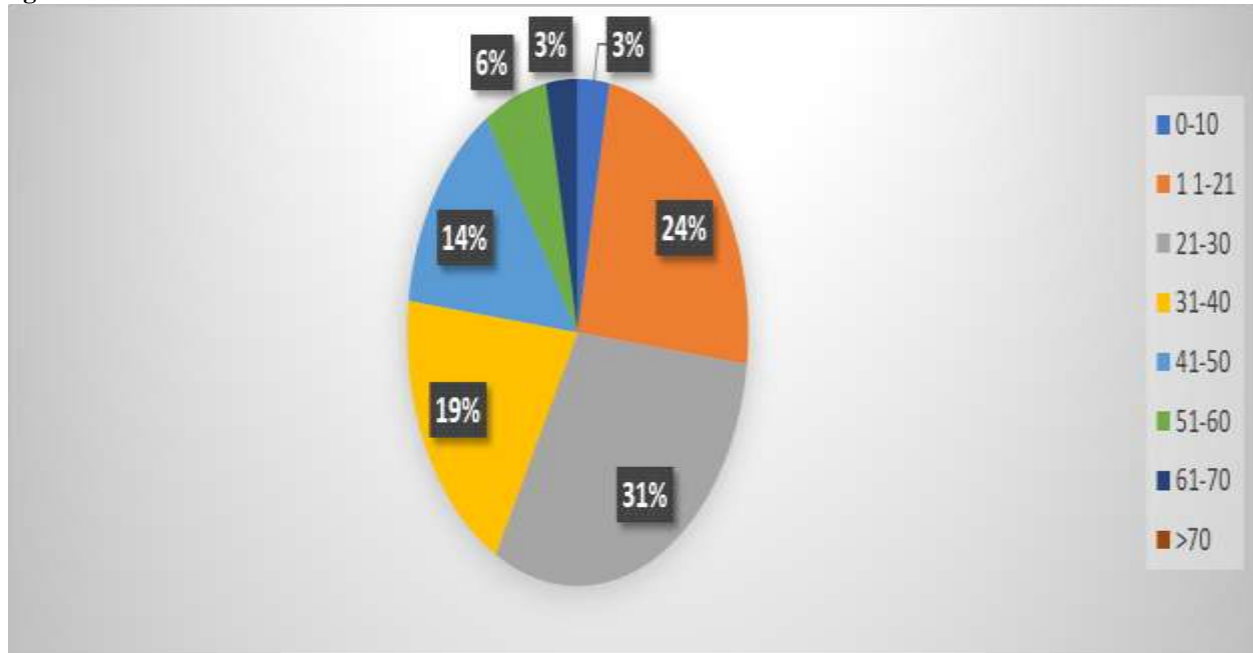
GENDER	NO. OF CASES	PERCENTAGE
MALE	46	46%
FEMALE	54	54%

occupation	No.of cases	percentage
students	36	36%
housewives	28	28%
Unskilled workers	24	24%
Skilled workers	3	3%
professionals	9	9%

AGE IN YEARS	NO. OF CASES	PERCENTAGE
0-10	3	3%
11-20	24	24%
21-30	31	31%
31-40	19	19%
41-50	14	14%
51-60	6	6%
61-70	3	3%

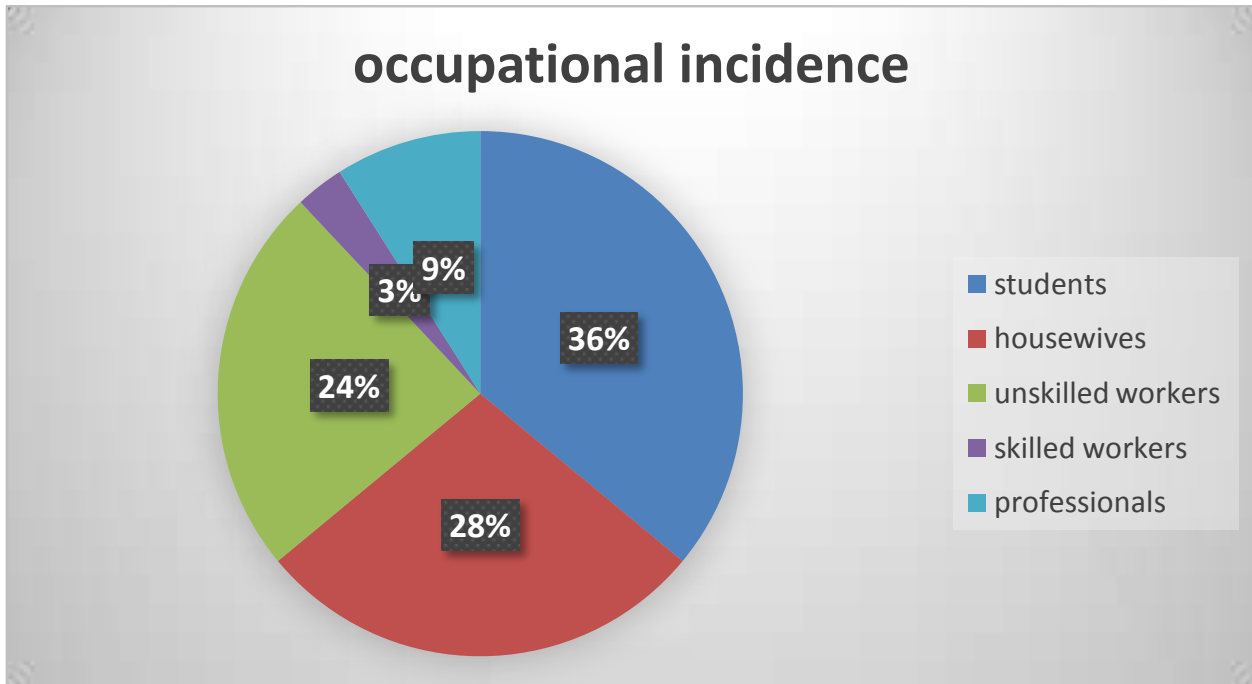


Age Distribution Of Ocular Causes Of Headache:

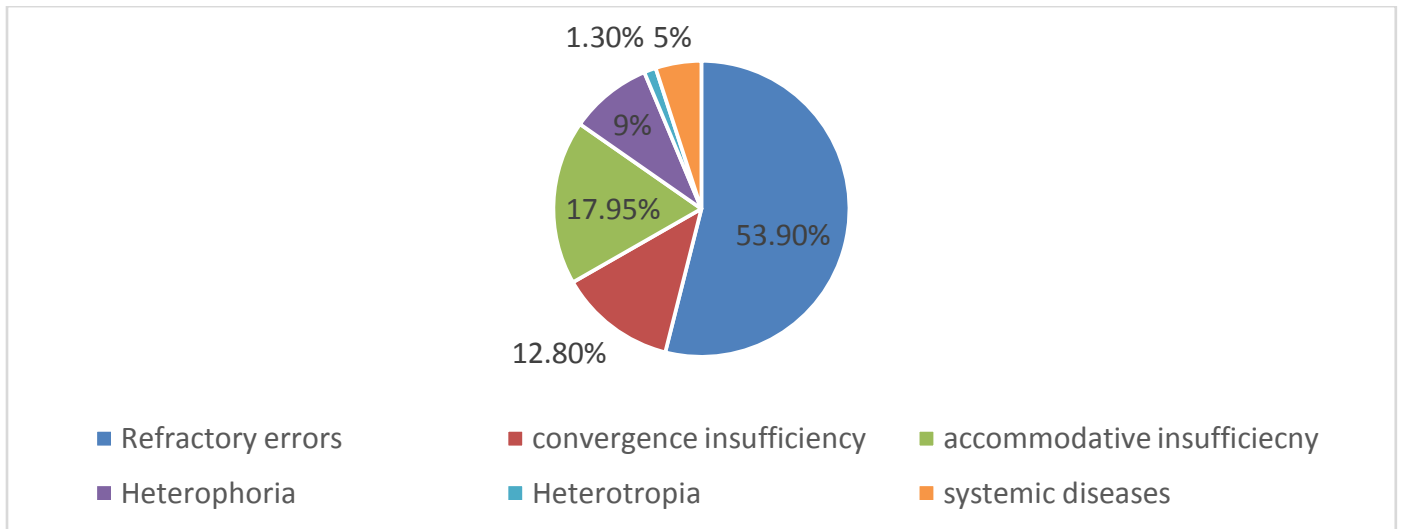


Occupational incidence of ocular causes of headache:

Causes of eye strain	No.of cases	percentage
Refractive errors	35	53.9%
Convergence insufficiency	10	12.8%
Accommodative insufficiency	14	17.95%
Heterophorias	7	9%
Heterotropia	1	1.3%
Systemic diseases	5	5.05%



RELATIVE INCIDENCE OF VARIOUS CAUSES OF EYE STRAIN IN OCULAR CAUSES OF HEADACHE:



PERIODICITY	NO.OF CASES	PERCENTAGE
intermittent	73	73%
constant	27	27%

MODE OF ONSET	NO.OF CASES	PERCENTAGE
Insidious	84	84%
Sub acute	7	7%
acute	9	9%

SITE OF PAIN	NO.OF CASES	PERCENTAGE
Peri orbital	24	24%
one side	44	44%
two side		
occipital	2	2%
Generalised	30	30%

TIME OF ONSET	NO.OF CASES	PERCENTAGE
Morning	26	26%
Day time	12	12%
Evening	52	52%
Night	10	10%

PERIODICITY	NO.OF CASES	PERCENTAGE
intermittent	73	73%
constant	27	27%

ASSOCIATED SYMPTOMS	NO.OF CASES	PERCENTAGE
Pain	49	49%
watering	18	18%
Blurring of vision	26	26%
Systemic factors	7	7%

RELIEVING FACTORS	NO.OF CASES	PERCENTAGE
Rest of the eyes	35	35%
analgesics	20	20%
No specific relieving factors	45	45%

Discussion:-

In the present study Most Common cause of Headache is Refractory error 2nd most common cause is accommodation insufficiency then convergence insufficiency in a study by Elena Nguyen¹, HilliaryInger², Catherine Jordan², David Rogers² study shows similar results.

In present study most commonly affected age group is in between 11-40 years R S Mahto et al study shows common age group is in between 15- 40 years

In present study shows most commonly females are affected similar results seen in R S Mahto et al study

In present study time of onset of headache mostly in the evening similar results are seen in by Elena Nguyen¹, HilliaryInger², Catherine Jordan², David Rogers² study

Primary headache disorders and neuro-ophthalmologic manifestations Daniel P Schwartz and Matthew S Robbins study Migraine, TACs, and HC are the main primary headache syndromes associated with neuro-ophthalmologic manifestations including orbital pain, photophobia, visual aura, and autonomic features.

Headache attributed to disorders of the eye by Deborah I. Friedman. Lynn K. Gordon. Peter A. Quiros study shows headache is most common symptom of Idiopathic intracranial hypertension, affecting more than 90% of patients. Headache characteristics are non specific, it is generally bilateral and often frontal.

In present study most of the patient present with one side periorbital headache and characteristics of insidious, intermittent relieved with rest.

Conclusion:-

This clinical study of ocular causes of headache was done on 100 patients at random both in out patients and in patients in the department of ophthalmology, government regional eye hospital, Visakhapatnam.

High incidence of headache of ocular origin was observed in between 21- 30 years of age group about 31% and very least percentage of incidence was observed about 3% in group between 60-70 years.

The maximum incidence was observed in students about 36%. Next to this is 28% which is contributed by housewives.

The headache of ocular origin is more common among the females about 54% and male 46%. Eyestrain is predominant factor contributing to the headache about 75% of the cases.

The predominant cause for the eyestrain is refractive error which contributes about 58.9% and next to this accommodation insufficiencies, which constitutes about 17.95%

Among the refractory errors, the astigmatism against the rule constitutes about 41%. And next to astigmatism, is the hypermetropia which constitutes about 28.22% towards the eye strain.

In maximum number of cases, the onset of headache is insidious in nature which constitutes about 79% and very least mode of onset is sub acute which constitutes about 7%. Regarding the periodicity of ocular headache, the intermittent type constitutes about 73% of cases and next to this is constant type which constitutes about 27%.

With respect to the time of onset of ocular headache, most of the time it occurs in the evening in about 52% of cases. Next common time is early morning about 26%

Maximum number of patient about 28% experience the pressure type of headache next to this is throbbing type which constitutes about 24%.

With respect to site of headache, the common site is periorbital region on both sides about 68%.

In about 67% of the cases provocative factors leads to the headache.

In about 45% of the cases there are no specific relieving factors towards the headache. In about 35% of cases the rest to eyes, relieves headache. Some 20% got relieves with the use of analgesics.

In majority of cases about more than 44%, the ocular headache is associated with other symptoms like pain or watering from the eyes.

In conclusion, from the above clinical study on ocular causes of headache, the major cause of ocular headache is eye strain which is mainly contributed by the refractive errors. So for all the patients who attending the out-patient department with complaints of headache, it is a must to subject the patient for retinoscopy in order to rule out refractive errors. Other causes for producing the headache like glaucoma , iridocyclitis , heterophorias, heterotropias should also be considered in evaluating the patient with ocular headache.

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