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Original Article

A Clinical Assessment of Facial Fractures in Adults - A 5 year retrospective study at K.R. Hospital, Mysore

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***ABSTRACT*:**
Introduction:- Maxillofacial region is injured the most common facial fractures includes mandible, nasal bone followed by Zygomatic, maxilla and alveolar processes. Over the past 100 years significant developments has been made in the treatment of maxillofacial trauma patients. This study may provide valuable data for etiology, incidence , type of maxillofacial injuries. **Materials and Methods:-** A detailed history of patients was taken from MLC record books of Department of Dentistry, K.R.Hospital, Mysore , required basic and specific investigations that were present in record books such as OPG, CT, X ray PNS were considered and recorded . The fractures were classified according to standard nomenclature and pattern of maxillofacial injuries were compiled according to age, sex , etiology , site, frequency , with helmets and without helmets. **Results:-** There were 287 mandibular, 212 maxillary, 97 zygomatico complex , 193 mid face, 167 combined mandibular and maxillary , 17 nasal bone, 27 NOE fractures. Type of injuries included car accidents – 173 (17.3%), motorcycle - 483 (48.3%) , assaults – 212 (21.2%) , sports – 132 (13.2%).. The distribution of maxillary fractures were Lefort I – 55.1%, Lefort II 12.7% , Lefort III in 18.86%, maxillary alveolus – 13.2%. Special attention was given to motorcycle accidents and its distribution among males and females with special emphasis on with helmets and without helmets (full face / half face helmets) which included out of 483 cases of motorcycle accidents cases with helmets were males 127, females 97, without helmets males 186, females 73. **Conclusion:-** Amongst mandibular fracture body of mandible is most injured least being the coronoid process. Lefort I is the most prevalent pattern of facial fracture in association with maxillary fracture followed by Lefort III pattern. Motorcycle accidents were predominant in this study least being sports injuries. Males encountered most of maxillofacial injuries from motorcycle accidents without Helmets followed by assaults. Patients with full face helmets received least impact on facial bone than those with half faced helmets. Females with half face helmets sustained more injuries than full face which in correlation with similar studies.
Key words:-Road traffic accidents, zygomatico complex, alveolar process, OPG, NOE.

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Introduction:-

The face, as most exposed part of body is particularly vulnerable to trauma. The main cause world wide are Road Traffic Accidents, assaults, sports and fire arm injuries. Clearly etiology would be expected to influence degree and injury sustained.[1,3]

Maxillofacial region is the most common injured facial fractures includes mandible, nasal bone followed by Zygomatic, maxilla and alveolar processes[4]. Over the past 100 years significant developments has been made in the treatment of maxillofacial trauma patients. This study may provide valuable data for etiology, incidence , type of maxillofacial injuries.

Purpose of the study:-

This descriptive analytical study assesses the cause, type, incidence, demographic data of maxillofacial fractures at our medical centre during 5 year period and compares them with existing body of literature.

A 5 year retrospective data to study clinical and epidemiological from 1000 patients were evaluated at our medical centre from 2012 to 2017.

There were 737 males[73.7%] and 263 females [26.3%] patients ranging from 20years - 70 years .A number of parameters including age, gender, cause of injury, site , type of injury were assessed by single resident maxillo facial surgeon .

MATERIALS AND METHODS:-

The information obtained was based upon analysis of maxillofacial injuries recorded from the Department of Dentistry ,K.R.Hospital, Mysore – MLC Record Books during last 5 years.All patients aged from 20years to 70 years of age and either sex presenting with maxillofacial trauma to department were included in the study .

Data collection procedure :-

A detailed history of patients was taken from record books then specially required basic and specific investigations that were present in record books such as OPG, CT, X ray PNS were considered and recorded . The fractures were classified according to standard nomenclature and pattern of maxillofacial injuries were compiled according to age, sex, etiology, site, frequency, with helmets and without helmets.

Data analysis:-

The data so collected were evaluated with Descriptive Frequency with percentage, Inferential Chi Square and Cramer's V test of significance and results analysed statistically and findings were presented as such

TABLE NO 1:- FRACTURES DISTRIBUTION

TYPE	NO. OF CASES	PERCENTAGE
MANDIBULAR FRACTURE	287	28.7%
MAXILLARY FRACTURE	212	21.2%
ZYGOMATIC COMPLEX	97	9.7%
MIDFACE FRACTURE	193	19.3%
MANDIBULAR AND MAXILLARY FRACTURE	167	16.7%
NASAL BONE FRACTURE	17	1.7%
NOE	27	2.7%
TOTAL	1000	

TABLE NO .2:- DISTRIBUTION OF MAXILLARY FRACTURES

TYPE	NO. OF CASES	PERCENTAGE
LEFORT I	117	55.1%
LEFORT II	27	12.7%
MAX. DENTOALVEOLAR	28	13.2%
LEFORT III	40	18.86%
TOTAL	212	

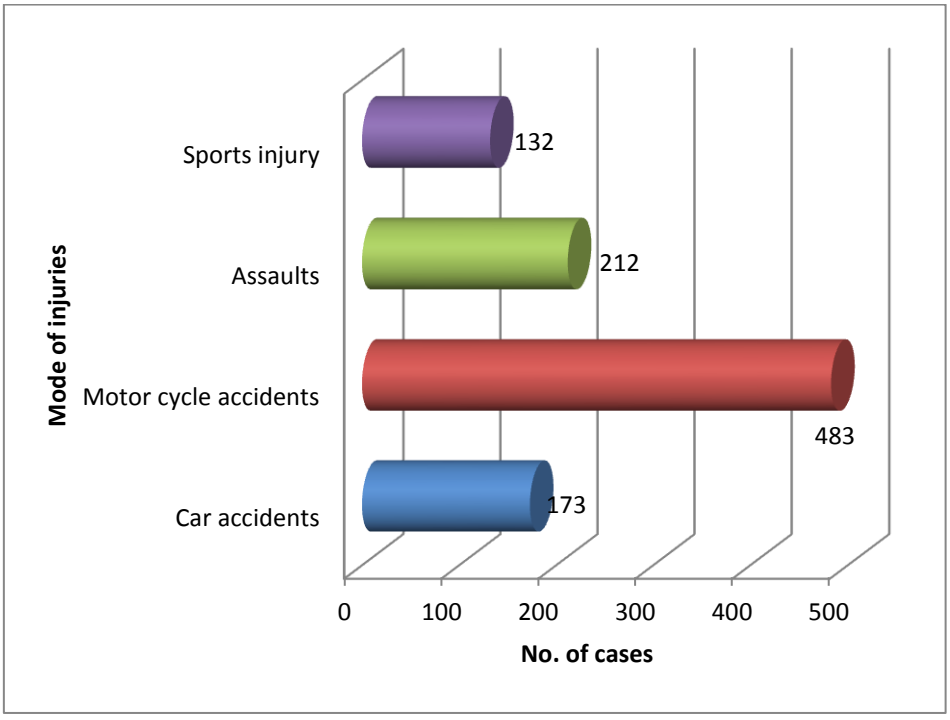

TABLE NO 3 - WITH HELMETS AND WITHOUT HELMETS

MOTOR CYCLE ACCIDENT	WITH HELMET	WITHOUT HELMET
TOTAL CASES - 483	MALES – 127(26.3%) FEMALES – 97(20%)	MALES -186(38.5%) FEMALES -73(15.11%)

TABLE NO 4:-TYPES OF HELMETS USED TOTAL CASES WITH HELMETS -224.

GENDER	FULL FACE HELMET	HALF FACE HELMET
MALES	38(17%)	89 (39.7%)
FEMALES	36(16%)	61(27.2%)

RESULTS :

There were 287 mandibular, 212 maxillary, 97 zygomatico complex, 193 mid face, 167 combined mandibular and maxillary, 17 nasal bone, 27 NOE fractures (Table no 1). Type of injuries included car accidents – 173 (17.3%), motor cycle - 483 (48.3%) , assaults – 212 (21.2%) , sports – 132 (13.2%). Regarding distribution of mandibular fracture 24.3% seen in condylar region, 7.3% symphysis and parasymphysis , 9.4% in angle region, 25.7% body of the mandible, 12.5% in ramus, 13.2% dentoalveolar and 1.3% in coronoid region.

The distribution of maxillary fractures were Lefort I – 55.1%, Lefort II 12.7% , Lefort III in 18.86%, maxillary alveolus – 13.2%(Table no 2). Types of injuries were also taken into account which included car accident 173 (17.3%), motor cycle – 483 (48.3%), assaults – 212 (21.2%), sports - 132 (13.2%), special attention was given to motorcycle accidents and its distribution among males and females with special emphasis on with helmets and without helmets (full face / half face helmets) (Table no 3)which included out of 483 cases of motorcycle accidents cases with helmets were males 127, females 97, without helmets males 186, females 73.

Cases with Full face helmets included males 38 (17%), females 36(16%), Half face helmets males 89 (39.7%), females 61 (27.2%)(Table no 4), which indicates less amount of full face use and more usage of half face helmets in our study.

DISCUSSION:-

Continuous long term collection of data regarding the epidemiology of maxillofacial fractures is important because it provides valuable information regarding development and analysis of fracture patterns and its further prevention to implement measures such as usage of helmets and seat belts in legislation[11,15]. Factors such as period of year, area can influence both type and frequency of injuries in population. Several methods of prevention may serve to reduce the risk and to minimise complications resulting from automobile accidents which is one of the predominant cause of injury among the population. There are some proposals to reduce traffic accidents one of the more adequate protection for both driver and passenger like increased seat belt and air bags in cars usage of helmets and air bags jackets for two wheelers, lower speed limits, better highway designs, greater use of driver education programmes and more rigid requirements for license renewal including thorough eye and medical examinations[13,14]. Violence prevention programmes focussing on both assault and self inflicted injury may help to decrease the maxillofacial trauma resulting from injuries.

Hogg[15] et al (2000) stated that in addition to current drinking and driving campaigns specific control of alcohol use is needed for both motor vehicle accident and violence prevention programmes. Further studies including fractures are always necessary because the trends in etiology of maxillofacial trauma are always changing and the etiology of fractures may suggest new ways to prevent these injuries.

CONCLUSION :

Mandible is the most common bone encountered followed by maxillary bone. Nasal bone fractures are least in our study recorded. Amongst mandibular fracture body of mandible is most injured least being the coronoid process. Lefort I is the most prevalent pattern of facial fracture in association with maxillary fracture followed by Lefort III pattern. Motorcycle accidents were predominant in this study least being sports injuries. Males encountered most of maxillofacial injuries from motorcycle accidents without Helmets followed by assaults. Patients with full face helmets received least impact on facial bone than those with half faced helmets. Females with half face helmets sustained more injuries than full face which in correlation with similar studies[6].

REFERENCES:-

1. Boffano P, Roccia F, Zavattero E, Dediol E, Uglesic V, Kovacic Z et al. European Maxillofacial Trauma (EURMAT) project, a multicentre and prospective study. J.Craniomaxillofac Surg 2015; 43(1):62-70.
2. Orucott . ISIK VM, Kanteaya Y, Gursoy K, Sungur N, Aslan G et al – Analysis of Fractured Mandible over two decades. J.Craniofacsurg 2016; 27(6) – 1457-1461.
3. Singaram M, G S V, Udhaya kumar RK – Prevalence, pattern, etiology and management of maxillofacial trauma in a developing country – a retrospective study. J.Korean Assoc . Oral Maxillofac Surg 2016; 42(4): 174-181.
4. Iida S, Kogo M, Sugiura T, Mima T, Matsuya T- Retrospective analysis of 1502 patients with facial fractures . Int .J. Oral Maxillofac Surg 2001; 30(4):286-290.
5. Kapoor P, Kalra N- A retrospective analysis of Maxillofacial injuries in patients reporting to tertiary care hospital in East Delhi. Int J. Crtit I lln Inj Sci 2012;2 :6-10.
6. Gopalakrishna G, Peek C, Kraus JF- Epidemiologic features of facial injuries among motorcyclists . Ann Emerg . Med 1998; 32:425-430.

7. Mohan D, IND Road Accidents in India – IATSS Research 2009; 33:75-79.
8. Singh V, Malkunje L, Mohammed S, Singh N, Dhasmana S, Das SK. The Maxillofacial Injuries – a study . National J. Maxillofacial Surgery 2012; 3:166-174.
9. Hwang K, Sunhye Y, Sin K- Analysis of nasal bone fractures six year study of 503 patients . J.Cranifacial Surg.2006;7: 261-264.
10. Adam AAD, Zhi L,Bing LZ , Zhong Xing Wu. Evaluation of treatment of zygomatic bone and zygomatic arch fractures – a retrospective study of 10 years. J. Maxillofac Oral Surg 2012; 11:171-176.
11. Fasola AO, Nyako EA, Obiechina AE, Arotiba J.T. Trends in the characteristics of maxillofacial fractures in Nigeria. J. Oral Maxillofac Surg 2003; 61(10): 1140-3.
12. Telfer MK, Jones GM, Shepherd J. Trends in aetiology of maxillofacial fractures in United Kingdom(1977-1987). Br J Oral Maxillofac Surg 1991;29(4):250-5.
13. Goldschmidt M.J., Castiglione CL, Assael LA, Li HMD. Craniomaxillofacial trauma in elderly . J. Oral Maxillofac Surg 1995; 53(10) 1145-9.
14. Schere M, Sullivan WG, Smith DJ, Phillips LG, Robson MC. An analysis of 1423 facial fractures in 788 patients at an Urban Trauma Center. J. Trauma 1989;29(3)388-90.
15. Hogg NJU, Stewart C, Armstrong JE, Girotti MJ. Epidemology of maxillofacial injuries at trauma hospitals in Ontario, Canada between 1992&1997.J.Trauma 2000; 49(3):425-32.
16. Markowitz BL, Manson PN, Sargent L, et al. Management of the medial canthal tendon in nasoethmoid orbital fractures: the importance of the central fragment in classification and treatment. Plast Reconstr Surg 1991;87(5):843–853.
17. Chen WJ, Yang YJ, Fang YM, Xu FH, Zhang L, Cao GQ. Identification and classification in Le Fort type fractures by using 2D and 3D computed tomography. Chin J Traumatol. 2006;9: 59–64.