

Profile of Ear Nose Throat and Head Neck Inpatient Care Undergoing Shortwave Diathermy in a Tertiary Care Centre of Punjab -A 3.5 Year Study

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Abstract

Background: Short wave diathermy acts as magic potion in many Otorhinolaryngology and head neck pathologies where either conservative therapeutic modality or surgical intervention has been undertaken. The profile of subjects who underwent short wave diathermy in a 3.5 year period is included.

Materials and Methods: 101 subjects undergoing short wave diathermy in the Otorhinolaryngology and Physiotherapy services of a tertiary care centre of Punjab were analyzed during a period of 3.5 years. The subjects were analyzed for their demographic profile, gender profile and seasonal variation over 3.5 years.

Results: Maximum patients 55.44% (56 patients) underwent shortwave diathermy were in the middle age group (21-60 years). Males 52.47% (53 patients) outnumbered the females 47.52% (48 patients) who underwent shortwave diathermy. In the age group 21-60 years, there were maximum females 57.14% (32 patients) where the male patients were comparatively less i.e. 42.85% (24 patients). Most significant difference was seen in above 60 age group where males 73.91% (17 patients) outnumbered females 26.08% (6 patients).

Conclusion: Short wave diathermy is an effective pain therapy for inflammations of ear, nasal cavity and maxillofacial region, it reduces the dose and duration of adjuvant oral analgesics.

Keywords : Shortwave diathermy, Oto-rhino-laryngology, head neck, age, gender.

Introduction

Neuropeptide release resulting in nociceptive impulses following tissue injury cause pain and inflammation.¹ Diathermies, incorporate ultrasound, shortwave, and microwave. Short-wave diathermy (SWD) is an electrotherapeutic modality with high-frequency electromagnetic energy to generate heat used in the conservative treatment of various otorhinolaryngology and head and neck pathologies like otitis media, otitis externa, chronic wounds, pre and post surgical interventions in dental, maxillofacial infections to reduce pain and edema.³

The use of non-ionizing radiation from the radio frequency portion of the electromagnetic spectrum to produce heat for pain relief started in 1890.² Most frequently used radio frequency is 27.12 MHz with power of 44 watts for 20 minutes.⁴

Continuous shortwave diathermy helps to relieve pain and resolve inflammation by promoting vasodilation, altering vascular smooth muscle tone and the contractility of the endothelial cells and decreasing the nociceptive substances.⁵

Shortwave diathermy is known to increase pain threshold by direct action of heat upon free nerve

endings or on the nerve trunk that supplies the affected area mostly during post incision and drainage masseteric space abscess, healing post extraction sockets, temporomandibular joint disorders, otitis externa, middle ear infections⁶.

Aim of Study

To study the demographic profile of ENTHNS subjects undergoing shortwave diathermy.

Material and Methods

101 subjects undergoing short wave diathermy in the Otorhinolaryngology and Physiotherapy services of a tertiary care centre of Punjab were analyzed during a period of five years (Jan 2017-July 2020).

The size and gender of the patients was recorded from the records.

The retrospective study included analysis of the age, gender of short wave diathermy.

Inclusion Criteria

1. Otitis Externa
 2. Benign Necrotizing Otitis Externa
 3. Pre and post surgical interventions
- Ludwig's angina

- Cervical abscesses

Exclusion Criteria

1. Malignancies of ENT and head neck region
2. Post radiotherapy patients

Statistical Analysis

All statistical calculations were done using Statistical Package of Social Sciences (SPSS) 17 version statistical program for Microsoft Windows (SPSS Inc. Released 2008. SPSS statistic for windows, version 17.0, Chicago). Ethical approval of the study was taken from the Institutional Ethics Committee.

Results/Observations

Total of 101 admitted patients over a period of 3.5 years (January 2017 to July 2020) underwent the short wave diathermy. Inpatient census of shortwave diathermy in ENTHNs patients of variou

Maximum admitted patients 55.44% (56 patients) who underwent shortwave diathermy were in the middle age group (21-60 years) and minimum 8.91% (9 patients) were below 14 years of age.

Males 52.47% (53 patients) outnumbered the females 47.52% (48 patients) who underwent shortwave diathermy.

Table 1 -Gender distribution according to age groups of patients undergoing diathermy

Gender/Age groups	<14	14-20	21-60	>60
Males	5	7	24	17
Females	4	6	32	6

Male outnumbered the females in all age groups except the 21-60 age group. In the age group 21-60 years, there were maximum females 57.14% (32 patients) where the male patients were comparatively less i.e. 42.85% (24 patients). Most significant difference was seen in above 60 age group where males 73.91% (17 patients) outnumbered females 26.08% (6 patients).

Table 2- seasonal variation among the Ipd patients of les than 14 years age

MONTH	2017		2018		2019		2020		TOTAL
	M	F	M	F	M	F	M	F	
JANUARY	1	0	0	0	0	0	0	0	1
FEBRUARY	0	0	0	0	0	1	1	0	2
MARCH	0	0	0	0	0	0	0	0	0
APRIL	0	0	1	0	0	0	0	0	1
MAY	0	0	0	0	0	0	0	0	0
JUNE	0	0	0	0	0	0	0	0	0
JULY	0	0	0	0	1	1	0	0	2
AUGUST	1	0	0	1	0	0	0	0	2
SEPTEMBER	0	0	0	0	0	1	0	0	1
OCTOBER	0	0	0	0	0	0	0	0	0
NOVEMBER	0	0	0	0	0	0	0	0	0
DECEMBER	0	0	0	0	0	0	0	0	0

Mostly the patients were seen during July and august among paediatric population .

Table 3- seasonal variation among adolescent 14-20 years

MONTH	2017		2018		2019		2020		TOTAL
	M	F	M	F	M	F	M	F	
JANUARY	0	0	0	0	0	0	0	0	0
FEBRUARY	0	0	0	1	0	0	1	0	2
MARCH	0	0	0	0	0	2	0	0	2
APRIL	0	0	1	0	0	1	0	0	2
MAY	0	0	0	0	1	0	0	0	1
JUNE	0	0	0	0	0	0	0	0	0
JULY	0	0	0	0	0	0	0	0	0
AUGUST	2	0	0	0	1	0	0	0	3
SEPTEMBER	0	0	0	1	1	0	0	0	2
OCTOBER	0	0	0	1	0	0	0	0	1
NOVEMBER	0	0	0	0	0	0	0	0	0
DECEMBER	0	0	0	0	0	0	0	0	0

The maximum admitted patients undergoing short wave diathermy were seen during the month of August followed by February march April September over a period of 3.5 years .

Table 4-seasonal variation among middle age 21-60 years Ent patients

MONTH	2017		2018		2019		2020		TOTAL
	M	F	M	F	M	F	M	F	
JANUARY	0	0	0	1	2	1	0	1	5
FEBRUARY	0	0	0	0	0	0	0	0	0
MARCH	0	0	0	0	1	1	0	2	4
APRIL	1	1	1	1	1	0	0	0	5
MAY	0	3	0	0	1	2	0	0	6
JUNE	0	1	0	1	0	2	0	0	4
JULY	0	1	2	0	3	1	0	2	9
AUGUST	0	1	1	2	3	1	0	0	8
SEPTEMBER	1	4	0	0	2	0	0	0	7
OCTOBER	0	0	1	0	0	0	0	0	1
NOVEMBER	1	0	0	1	2	0	0	0	4
DECEMBER	0	1	1	1	0	0	0	0	3

Maximum patients were seen in the month of July over a period of 3.5 years followed by August among middle aged population .

Table 5- seasonal variation among elderly >60 years population

MONTH	2017		2018		2019		2020		TOTAL
	M	F	M	F	M	F	M	F	
JANUARY	0	0	0	0	0	0	2	0	2
FEBRUARY	0	0	0	0	0	1	1	2	4
MARCH	0	0	0	0	0	0	0	0	0
APRIL	1	0	0	0	0	0	0	0	1
MAY	1	0	0	0	0	0	0	0	1
JUNE	0	0	1	1	2	0	0	0	4
JULY	1	1	0	0	1	0	0	0	3
AUGUST	0	0	0	0	0	0	0	0	0
SEPTEMBER	1	0	0	0	2	0	0	0	3
OCTOBER	0	0	0	0	0	0	0	0	0
NOVEMBER	1	0	1	0	2	0	0	0	4
DECEMBER	0	0	0	1	0	0	0	0	1

Among elderly admitted population most of the patients were seen during months of June ,november ,February followed by July ,august .

Discussion

Diathermy is an effective thermotherapeutic agent in inflammatory diseases of ear ,nose and throat .Hollinder described the short wave diathermy to be more effective

as compared with the then available methods of conveying external heat to the body .

Total of 101 patients admitted under otorhinolaryngology and head and neck surgery department over a period of 3.5 years (January 2017 to July 2020) underwent the short wave diathermy

Maximum admitted patients 55.44%(56 patients)

who underwent shortwave diathermy were in the middle age group (21-60 years) and minimum 8.91% (9 patients) were below 14 years of age.

Kalerkar S et al study on short wave diathermy reported mean age of patients to be 22.65 ± 1.85 years .

Male outnumbered the females in all age groups except the 21-60 age group. In the age group 21-60 years, there were maximum females 57.14%(32 patients) where the male patients were comparatively less i.e. 42.85% (24 patients).

30 subjects between 18- 50 years age were analyzed for the effect of short wave diathermy in the study by Anand B Heggannavar et al with female preponderance.

In our study Most significant difference was seen in above 60 age group where males 73.91%(17patients) outnumbered females 26.08%(6 patients). This is attributed to the fact that most the admitted elderly patients were diabetics having malignant otitis externa which shows male predilection.

The maximum admitted patients undergoing short wave diathermy were seen during the month of August followed by February march April September over a period of 3.5 years.

Among elderly admitted population most of the patients were seen throughout the year (i.e. during months of June ,november ,February followed by July ,august).

Conclusion

Short wave diathermy is an effective pain therapy for inflammations of ear,nasal cavity and maxillofacial region , it reduces the dose and duration of adjuvant oral analgesics.

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Conflict of Interest: None declared

Ethical Approval: The study was approved by the Institutional Ethics Committee.

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