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Indian Journal of Pathology and Oncology

Journal homepage: www.innovativepublication.com

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## **Original Research Article**

# Spectrum of oral cancers in a tertiary care hospital in industrial belt of Haryana, India

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## ARTICLE INFO

Article history: Received 25-08-2019 Accepted 05-02-2020 Available online 25-05-2020

Keywords: Oral cancer Tongue Smoking Young Industrial belt India

## ABSTRACT

Oral cancer is amongst the three top cancers in India, accounting for more than 30% of all cancers reported in the country. It is also the leading cause of cancers in males in India. Faridabad district in Haryana is the  $9^{th}$  largest Industrial estate in Asia.

Objective: To study the spectrum of oral cancers in the Industrial belt of Haryana, Faridabad.

**Materials and Methods:** A descriptive analysis was conducted on biopsies of oral cancers at ESIC Medical College and Hospital, Faridabad. The hospital based cancer registry data for oral cancers have been presented over a period of 30 months (2016-19). This centre caters to patients working in factories, who are covered under ESI scheme and have monthly income of less than 21,000 INR. The data was collected based on patient record.

**Result:** A total of 130 cases of oral cancers were studied and tongue was the commonest site (40.5%) with ulcero-proliferative growth. Male: female ratio was 5.5:1. The highest presentation was noted in the  $4^{th}$  decade (30.7%) with male predominance of 85%. Ulcer was the most common presentation in 57% (75/130). Moderately differentiated tumours were noted in 53% (70/130) of cases. Majority of the cases presented with history of smoking.

**Conclusion:** This lower age of presentation of oral cancers with tongue as the commonest site and high incidence of tobacco smoking among patients who represent the lower middle socioeconomic strata of society and mostly are factory workers alarm us to focus on predisposing factors.

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## 1. Introduction

The oral cancer which poses huge health burden is one of the most common cancers in Indian subcontinent. It involves the head and neck primarily arising in the oral cavity and oropharynx. The tumour may be locally confined or extend to the neighbouring organs.<sup>1</sup> It is the  $6^{th}$  most common malignancy globally with annual incidence of over 30,000 cases. About 62% cases are reported from developing countries.<sup>2</sup> The oral cavity is the most common site of cancer in the Indian subcontinent contributing to

one third of all cancers.<sup>3</sup> It is among top three cancers in India.<sup>4</sup> Almost 90 to 95% oral cancers in India are Squamous cell carcinoma.<sup>5</sup> Accounts for 30% of all cancers in India and age adjusted rate is 20 per 100000.<sup>3</sup> The most important risk factors are alcohol and tobacco. Tobacco includes smoking of cigarettes, bidi and hookah. And use of smokeless tobacco which includes betel quid and areca nuts. Also implicated are HPV infection, poor dental care and poor nutrition.<sup>5</sup> Immunosuppression, poor oral hygiene, ill-fitting dentures are other factors contributing to the oral cancer.<sup>1</sup> In regions near the equator there is high frequency of squamous cell carcinomas. The mean age of presentation in Asian Countries is 5 to 6<sup>th</sup> decade compared to the

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 $7^{th}$  to  $8^{th}$  decade in North American population.<sup>6</sup> There is an increasing trend of Oral cancers among younger population globally. About 4 to 6% cases are noted below the  $4^{th}$  decade. This probably is due to the increasing use of smokeless tobacco in form of Pan Parag, Gutka and Cigarette smoking in young adults in countries like India, Pakistan and Bangladesh.<sup>1</sup>

Low socioeconomic class are associated with factors like poor nutrition, health care, living condition and greater exposure to risk factors. The detection of and prevention of disease is also compromised, all of which together contributes to the development of oral cancers.<sup>5</sup>

Geographical variations in different populations and regions arise due to difference in the type, pattern of tobacco use, lifestyle and ethnicity. Variations in the epidemicity of the cancer are related to age of the population and regional difference in the risk factors.<sup>7</sup> Burden of Oral cancer in India is related to several factors (Figure 1).

Social media and television plays an important role to create awareness about the harmful effects of tobacco. Western influence on the Indian lifestyle and pattern of tobacco use also plays an important role in the site specific incidence of oral cancers.

The present study was carried to study the spectrum of oral cancers among the factory workers in Industrial belt of Haryana, Faridabad district, India. Haryana ranks 9<sup>th</sup> among the industrial estates in Asia. The study depicts an increasing trend of cancer of tongue among the young factory workers belonging to low socioeconomic strata.

To the best of our knowledge it is the first study of oral cancers among the industrial workers globally.

## 2. Materials and Methods

A retrospective descriptive analysis of all biopsies of oral cancers were conducted in the department of Pathology at ESIC Medical College and Hospital, Faridabad. The hospital based cancer registry data for oral cancers was presented over a period of 30 months (2016-19) since the inception. The subjects included factory workers covered under ESI scheme attending the tertiary care centre. The data was collected based on the hospital patient record.

The data was presented in the XL sheet and calculated as ratio and proportions. Chi square test and t test were applied. The significance level was set at 5%.

## 3. Results

In the present cross sectional analysis it was seen that out of 130 cases of Oral cancers, 110 were males and 20 were females which shows a predominance of males, with male to female ratio of 5.5:1.

The age distribution is from 23 to 80 years. The mean age of cancer was 54.01 yrs. The age wise distribution showed maximum number of cases (40/130) were in the age group

of 40 to 50 years followed by age group 50 to 60 years (33/130) and minimum numbers (5/130) were recorded below 30 years (Figure 3).

Sex wise distribution showed most common age group in males was 41-50 years while in females it is 50-60 years.

Smoking tobacco contributes to 67% (87/130) while tobacco chewing contributes 50% (65/130). Out of these cases, 20% gave history of alcohol consumption. None of the females gave history of alcohol intake (Table 1).

The number of cases with no history of alcohol and smoking is 15% (22/130).

A significant association was found between sex and habits. (p < 0.001)

The highest proportion of cancer was noted in the tongue which was 40.5% followed by cancer of buccal mucosa (18.5%) and lowest being the lip 1.5%. (Figure 4).

Tongue was the commonest site in both males and females with maximum number of cases being moderately differentiated carcinoma (Table 2).

The association between sites and habits was found to be significant (p < 0.001)

The commonest subtype was Squamous cell carcinoma of which 53% were moderately differentiated (70/130) carcinoma followed by 35% (40/130) which were well differentiated and 10% (13/130) were poorly differentiated. Association between the grade of the tumour and habits were found to be statistically significant. (p < 0.001)

Other subtypes noted were Basosquamous Ca, Carcinoma In Situ, Mucoepidermoid carcinoma each contributing 2 cases and a single case of Spindle cell ca.

The commonest presentation was ulceroproliferative comprising 57% of all cases (75/130) (Figure 4) and rarest being pain and redness contributing to 0.07% (10/130).

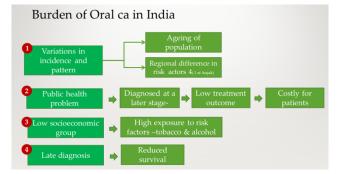


Fig. 1: Burden of Oral ca in India

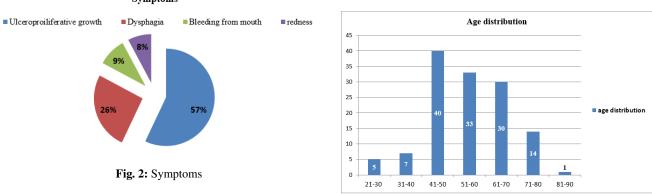
## 4. Discussion

Oral cancers are malignant neoplasm of oral cavity which includes the lip, floor of the mouth, cheek lining, gingiva, palate and tongue.<sup>5</sup> 40% of all cancers in the South Asian countries and 30% of cancers in India are Oral cancer. It is the commonest cancer in males and 4<sup>th</sup> most

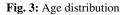
Site	Μ	F	Total	Grade	Total	Μ	F
				WDSCC	17	11	06
Tongue	43	10	53	MDSCC	32	29	03
				PDSCC	02	02	0
				SQ papilloma	01	01	0
				Mucoepidermoid Ca	01	01	0
Buccal mucosa	19	5	24	WDSCC	13	11	02
				MDSCC	10	07	03
				PDSCC	0	0	0
				SQ papilloma	01	01	0
Pharynx	9	2	11	WDSCC	03	03	0
				MDSCC	07	05	02
				PDSCC	01	01	0
Tonsil	10	1	11	WDSCC	04	04	0
				MDSCC	06	05	01
				PDSCC	0		
				Basosquamous SCC	01	01	0
Supraglottis	8	0	8	WDSCC	01	01	0
				MDSCC	06	06	0
				PDSCC	0		
				CIS	01	01	0
Pyriform Fossa	5	1	6	WDSCC	01	01	
				MDSCC	03	02	01
				PDSCC	02	02	
Retromolar Trigone	5	1	6	WDSCC	03	03	0
				MDSCC	02	01	01
				PDSCC	01	01	0
Vocal cord, Arytenoid	8	0	8	WDSCC	04	04	0
				MDSCC	02	02	0
				PDSCC	02	02	0
Lip	2	0	2	WDSCC	01	01	0
				MDSCC	0	0	0
				PDSCC	01	01	0
Palate	2	1	1	WDSCC	01	01	0
				MDSCC	0	0	0
				PDSCC	0	0	0
				CIS	01	0	01

 Table 2: Site wise tumor differentiation

Symptoms



common cancers in females.<sup>8</sup> Tobacco is the most important predisposing factors for oral cancers which includes



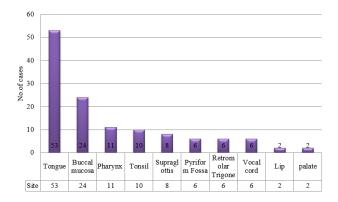


Fig. 4: Site wise distribution of cases

#### Table 1: Habits

Habits	No. of cases	<b>Percent</b> 35 23	
Smoking Alone	46		
Tobacco Chewing	30		
Tobacco Chewing And Smoking	17	13	
Smoking, Tobacco Chewing And Alcohol	03	0.02	
Alcohol	20	15	
No history	14	11	

both chewable and non-chewable products. Tobacco alone contributes to 75% of the cases.<sup>9</sup>

According to Global Adult Tobacco Survey, 34.6% of adults in India; including 47.9% of males and 20.3% of females consume tobacco. As per the data 14% of adults smoke tobacco while 25.9% consume smokeless tobacco.<sup>10</sup> Smokeless tobacco in the form of Gutka, Pan etc are increasing among young adults in the Indian subcontinent.

Tobacco, areca nut, betel quid chewing, alcoholism are the predominant risk factors. Alone or in combination these are major predisposing factors for oral potential malignant disorders (OPMD or oral cancers.<sup>1</sup> The incidence of OPMD is 1-5%.<sup>11</sup> These include leukoplakia, erythroplakia, submucosal fibrosis, lichen planus, actinic keratosis, palatal lesions in smokers.<sup>12</sup>

Alcohol and tobacco products are known carcinogenic agents.

Alcohol and tobacco were the most important risk factor in our present study and both are more common in males while 15% cases gave no history. Tobacco and alcohol consumption at present and in the past are considered the most important risk factors in other studies for OSCC.<sup>13</sup> Several studies showed males showed greater association with these risk factors.<sup>14–16</sup>

Tobacco Smoking contributed to 67% (85/130) while chewing contributed to 50% (65/130). However, Only 20% of these cases gave history of alcohol consumption.

This is in concordance to a study by Raveendran et al.<sup>1</sup> in which Alcohol and tobacco was implicated in three fourth

of the cases while in remaining one fourth of the cases no definite etiological factor could be identified.

At times no history of alcohol and smoking could be elicited in younger patients as the most common risk factors. In the younger age group dietary or nutritional factors and genetic predisposition, and high-risk HPV types (especially HPV type 16) have been demonstrated as causative factors in OSCC more than the adults or elderly group.<sup>17</sup>

HPV type 16 is an independent major risk factor for oral Cancer. In developing countries up to 23% of malignancies are caused by infectious agents, including HPV.<sup>18</sup>

The demonstration of HPV mediated oropharyngeal cancer is an important development in the pathogenesis of oral cancers. However, HPV detection was not undertaken in the present study as the test is not routinely performed in the given setup.

Tongue is the most common site in the western world as smoking is more prevalent while carcinoma of the buccal mucosa are more common in the Asian Countries due to the habit of chewing and keeping the tobacco or the betel quid in the gum.<sup>19</sup>

However, present study shows Tongue as most common site (40.5%) followed by the buccal mucosa (18.5%). Tongue is also the commonest site noted in several other Indian studies namely by Patel et al (23.02%), Mehrotra et al (42.5%) and IYPE et al (52%). Agarwal and Rajderkar also noted Tongue as the most common site.<sup>20–22</sup> Studies from Mexico (44.7%) and Brazil (34.9%) also showed tongue as the commonest site.<sup>17,19</sup>

Buccal mucosa was noted as the commonest site by Giri et al (37.1%).<sup>23</sup> Few Indian studies by Anjali Narwal (37.9%), Shenoi et al (45.7%) and Khanderkar et al (55%) reported alveolus as the most common site.<sup>24,25</sup>

The mean age of presentation in the Asian populations is  $5^{th}$  and  $6^{th}$  decade compared to the  $7^{th}$  and  $8^{th}$  decade in North America.<sup>26</sup> The present study shows the highest number of cases were in the  $4^{th}$  and  $5^{th}$  decade, a decade earlier than that noted in most Indian studies. This is in concordance with study by Sharma and Krishna where majority of cases were seen in  $4^{th}$  and  $5^{th}$  decade. Also, Krisnanmurthy and Ram Shankar noted majority of patients were in age group of 51 to 60 years with mean age of 53.4 years.<sup>27</sup> Also, Giri et al noted majority of cases were above 60 years of age and only a few cases were below 30 years similar to the present study.<sup>23</sup> Only 5% of the patients reported in the present study were under 30 years of age, as presented by Jainkittivong, et al.<sup>28</sup> Literature reveals the means usually ranging from 4 to 6%.<sup>13</sup>

The present study highlights the age group affected in males is 41 to 50 years which is a decade lower than females. This is in concordance with several other studies were the age group of females are higher than males in oral squamous cell carcinoma(OSCC).<sup>15,29</sup>

Male to female ratio is higher 5.5:1, as the habits of tobacco smoking and chewing both are more among males. This is in concordance with studies by Patel et al from Gujarat who found a ratio of 3: 1, Mehrotra et al noted ratio of 3.27 : 1 from Allahabad, Mamta Agarwal from Gorakhpur found a ratio of 3.34 : 1 while Iype et al from Kerala recorded a ratio 2.3 : 1 and Giri et al found a ratio of 1.85 : 1. On the contrary, in 2011 Moore et al and Patel et al noted a higher prevalence of females for oral carcinoma of Tongue.

The factory workers belong to the lower and middle socioeconomic group and are predominantly males. Studies have shown lower socio economic group have inadequate access to health care facilities and poor health services. Poor dental hygiene contributes to 85% of cases. Those having dentures for more than 15 years and not visiting dentists regularly are also at higher risk.<sup>5</sup> Lack of awareness of the harmful effects of tobacco and delay in the diagnosis at early stage is an important factor for increased incidence of Oral cancers among this population.

However, several recent studies have shown an increase in the number of affected females, with male to female ratio lower than 2:1, which can be attributed to the social changes and the life style pattern of the present day women exposing them to more use of alcohol and smoking in regular life and high risk strains of HPV subtypes.<sup>17</sup>

In the present study, Ulcero proliferative (UC) lesion is the most frequent presentation (75%) followed by dysphagia (33%). Similar to this study, UC growth was also noted in 74.5% cases by Anjali Narwal et al while Mathur et al reported UC lesions in 52.9% cases. Similar findings were also noted by Shyam Sunder et al, by Ishiyama et al and Wahiel et al.<sup>25</sup>

Majority of oral cancers are squamous cell carcinomas. The present study shows moderately differentiated cacinoma was the most common histological subtype in both the males and females. This is similar to other studies which also showed moderately differentiated and well differentiated OSCC as the most common subtypes.<sup>17</sup> On the contrary, Effiom, et al. have shown that 47.6% of their cases were poorly differentiated tumors, while well differentiated tumors represented 32.6%.<sup>29</sup>

With the introduction of the cigarettes and other Tobacco products act (COPTA) in 2003, smoking was banned in public places in India and also sale of tobacco products to children below 18 yrs. Significant awareness was created in social media and television along with pictorial and textual warning on these products.<sup>30</sup> This might be contributing to the changes in the presentations of oral cancer in India.

To summarise this is the first pilot study on Oral cancers among industrial workers in the India. It gives for an insight to look for etiological factors that predispose to early age of presentation in males with tongue as the commonest site followed by buccal mucosa. The higher male incidence may be explained by increased number of male workers and more indulgence in smoking and alcohol during the long working hours in factories. Factory workers generally belong to low socioeconomic group with low income which contributes to lack of proper diet, nutrients and dental hygiene.

## 5. Limitations

It is a hospital based cross sectional study which caters to specific patient population working in Industries and their families. Specific dietary and tobacco consumption habits could not be correlated much with the sites of predilection of Oral cancers and being retrospective, history of oral hygiene also could not be elicited.

## 6. Conclusion

No centralised hospital based Oral Cancer registry or population based cancer registry is available in most Indian States. Haryana is small agricultural state with predominance of rural population. Such studies will give an insight to the health authorities to raise the public awareness of the risk factors as well as early diagnosis and treatment of oral cancers in India where it has high prevalence.

#### 7. Source of Funding

None.

## 8. Conflict of Interest

None.

#### References

- Nath SG, Raveendran R. Precipitants of oral cancer in India. *Clin* Cancer Investig J. 2012;1(3):111–3.
- Kekatpure V, Kuriakose MA. Oral cancer in India: Learning from different populations. Available from: http://www.nycancerprevention. com/archive\_newsletter/issue/14/cancer\_prevention/feature/india. shtml.
- Sankaranarayanan R. Oral cancer in India: An epidemiologic and clinical review. Oral Surg Oral Med Oral Pathol. 1990;69(3):325– 30.
- Coelho KR. Challenges of the Oral cancer Burden in India. J Cancer Epidemiol. 2012;p. 1–17. doi:10.1155/2012/701932.
- Varshita A. Prevelance of Oral cancer in India. J Pharm Sci Res. 2015;7:845–8.
- Antoniades DZ, Styanidis K, Papanayotou P, Trigonidis G. Squamous cell carcinoma of the lips in a northern Greek population. Evaluation of prognostic factors on 5-year survival rate—I. *Eur J Cancer B Oral Oncol.* 1995;31(5):333–9.
- Petersen PE. Strengthening the prevention of oral cancer: the WHO perspective. *Community Dent Oral Epidemiol*. 2005;33:397–406.
- Krishnamurthy A, Ramshankar V. Early stage oral tongue cancer among non tobacco users; an increasing trend observed in south Indian patient population presenting at a single centre. *Asian Pac J Cancer Prev.* 2013;14(9):5061–5.
- Rodriguez T, Altieri A, Chatenoud L, Gallus S, Bosetti C, Negri E, et al. Risk factors for oral and pharyngeal cancer in young adults. *Oral Oncol.* 2004;40(2):207–13.

- 11. International Institute for Population Sciences, Ministry of Health and Family Welfare, Government of India. Global Adult Tobacco Survey India (GATS India), 2009-2010. New Delhi: Ministry of Health and Family Welfare; Mumbai: International Institute for Population Sciences; 2010. Available from: http://www.whoindia.org/ en/Section20/Section251861.htm.
- Napier SS, Cowan CG, Gregg TA, Stevenson M, Lamey PJ, Toner PG. Potentially malignant oral lesions in Northern Ireland: size (extent) matters. *Oral Dis*. 2003;9(3):129–37.
- 12. Warnakulasuriya S, Mak V, Möller H. Oral cancer survival in young people in South East England. *Oral Oncol.* 2007;43(10):982–6.
- 13. Johnson NW, Jayasekara P, Amarasinghe AA. Squamous cell carcinoma and precursor lesions of the oral cavity: epidemiology and etiology. *Periodontol*. 2000;57:19–37.
- Albuquerque R, López-López J, Marí-Roig A, Jané-Salas E, Roselló-Llabrés X, Santos JR. Oral tongue squamous cell carcinoma (OTSCC): alcohol and tobacco consumption versus non-consumption. A study in a Portuguese population. *Braz Dent J.* 2011;22(6):517–21.
- Kruse AL, Bredell M, Grätz KW. Oral cancer in men and women: are there differences? *Oral Maxillofac Surg.* 2011;15(1):51–5.
- Nemes JA, Redl P, Boda R, Kiss C, Márton IJ. Oral Cancer Report from Northeastern Hungary. *Pathol Oncol Res.* 2008;14(1):85–92.
- Pires FR, Ramos AB, Oliveira JB, Tavares AS, Luz PS, Santos TC. Oral squamous cell carcinoma: clinicopathological features from 346 cases from a single oral pathology service during an 8-year period. J Appl Oral Sci. 2013;21(5):460–7.
- Pannone G, Santoro A, Papagerakis S, Muzio LL, Rosa GD, Bufo P. The role of human papillomavirus in the pathogenesis of head & neck squamous cell carcinoma: an overview. *Infect Agents Cancer*. 2011;6(1):4.
- Hernández-Guerrero JC, Jacinto-Alemán LF, Jiménez-Farfán MD, Macario-Hernández A, Hernández-Flores F, Alcántara-Vázquez, et al. Prevalence trends of oral squamous cell carcinoma. Mexico City's General Hospital experience. *Med Oral Patol Oral Cir Bucal*. 2013;18(2):e306–11.
- Patel MM, Pandya AN. Relationship of oral cancer with age, sex, site distribution and habits. *Indian J Pathol Microbiol*. 2004;47:195–7.
- Mehrotra R, Singh M, Kumar D, Pandey AN, Gupta RK, Sinha US. Age specific incidence rate and pathological spectrum of oral cancer in Allahabad. *Indian J Med Sci.* 2003;57:400–4.
- Agrawal KH, Rajderkar SS. Clinicoepidemiological profile of oral cancer: a hospital based study. *Indian J Community Health*. 2012;24:80–5.
- Giri P, Singh K, Phalke D. Pattern of oral cancer registered at a tertiary care teaching hospital in rural Western Maharashtra. *Int J Res Med Sci.* 2013;1(3):233–6.
- Shenoi R, Chaudhuri, Sapre SB, Devrukhkar V, Sharma BK, Chikhale A. Demographic and clinical profile of oral squamous cell carcinoma patients: A retrospective study. *Indian J Cancer*. 2012;49(1):21–6.
- 25. Khandekar SP, Bagdey PS, Tiwari RR. Oral cancer and some epidemiological factors: a hospital based study. *Indian J Community*

Med. 2006;31:157-66.

- Sieczka E, Datta R, Singh A, Loree T, Rigual N, Orner J, et al. Cancer of the buccal mucosa: Are margins and T-stage accurate predictors of local control? *Am J Otolaryngol.* 2001;22(6):395–9.
- Narwal A, Devi A, Yadav AB, Bhogal A. Epidemiological and Clinico-Pathological Study of Oral Cancers in a Tertiary Care Teaching Hospital: An Institutional Study in Haryana. *Int J Oral Maxillofac Pathol*. 2014;5(3):2–06.
- Langlais RP, Jainkittivong A, Swasdison S, Thangpisityotin M. Oral Squamous Cell Carcinoma: A Clinicopathological Study of 342 Thai Cases. J Contemp Dent Pract. 2009;10(5):33–41.
- Effiom OA, Adeyemo WL, Omitola OG, Ajayi OF, Emmanuel MM, Gbotolorun OM. Oral Squamous Cell Carcinoma: A Clinicopathologic Review of 233 Cases in Lagos, Nigeria. J Oral Maxillofac Surg. 2008;66(8):1595–9. doi:25.
- Mishra A, Malik A, Garg A, Shetty R, Mair M, Chakrabarti S, et al. Trends of oral cancer with regard to age, gender, and subsite over 16 years at a tertiary cancer center in India. *Indian J Med Paediatr Oncol.* 2018;39(3):297–300.

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**Cite this article:** Raychaudhuri S, Menia R, Pujani M, Singh M, Singh K, Agarwal C, Sharma N, Chauhan V, Jain A. Spectrum of oral cancers in a tertiary care hospital in industrial belt of Haryana, India. *Indian J Pathol Oncol* 2020;7(2):253-258.