# An investigation on How Community Pharmacies and Herbalist's Shops manage patients with probable Oral Cancer

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**ABSTRACT**

**Background and Aim:** Oral cancer is a serious health problem, mainly in cases with late diagnosis. The objective of this study was to investigate the role of community pharmacists, community pharmacy assistants and herbalists in late stage diagnosis of oral cancer.

**Methods and Materials:** A cross-sectional study by the standardized simulated patient approach was undertaken to investigate the recommendation given to a potential cancer patient at pharmacies and herbalists' shops in Rasht, Iran. The introductory statement was "My father is 63 years old and he is a smoker who has a painful ulceration on his tongue for about 6 months which wasn't painful at first but is painful now. What would be your recommendation? "All the responses were noted and transferred to data sheets. The recommendations were analyzed separately and then grouped. Recommended therapies and their administrations were also recorded.

**Results:** The results showed that 73% of community pharmacies referred patients to primary medical care systems. Community pharmacists and community pharmacy assistants had closely equal roles (74.3% and 72.5%, respectively). Contrariwise, only 7.1% of herbalists referred patients with oral ulcers to a physician or a dentist. Almost 10% of the pharmacies recommended OTC drugs only and 11% prescribed medications combined with referral to a medical or dental practitioner for consultation. In reverse, 78.6% of herbalists recommended an OTC remedy and none of them advised patients to visit a GP or dentist accompanied by prescribing an herbal remedy.

**Conclusion:** Herbalists have a potential role in diagnostic delay in patients with oral cancer.

Orginal Article

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## Introduction:

Oral cancer as a major health problem comprises over 90% of the malignancies in oral and maxillofacial region. [1,2] The risk of oral cancer is higher in those aged more than 65 years, black males and chronic alcohol and tobacco users. [1] World Health Organization (WHO) has reported oral cancer as the sixth most common cancer in males after lung, prostrate, colorectal, stomach, and bladder cancer while in females it is the tenth most common cancer after breast, colorectal, lung, stomach, uterus, cervix, ovary, bladder, and liver cancer. [3] The worldwide rate of oral cancer is lower than breast, prostate, and colon cancers. [1,4] Fortunately, early diagnosis may increase the rate of survival by more than 80%. [1,2] Nevertheless, many patients are diagnosed at a late stage of the disease when the survival rate is poor (50–60% 5 years post-treatment). Two important factors that cause late stage diagnosis are patients delay and professional delay. [5] Patients delay comes from the low public awareness of oral cancer. [6] Patients suffering from mouth ulcers often first request general advice from community pharmacies and their personnel (pharmacists and salespersons) [7] as these are accessible places to visit and look for advice on a range of diseases, including mouth ulcers, [8] friends or relatives can easily act as 'proxy consulters' on behalf of the patient [8, 9] and also advertisement in the press for proprietary products may encourage them to consult their pharmacist first. [7] Previous investigations suggest that patients with symptoms of a probable oral cancer are not always advised by community pharmacies to seek professional medical care, especially when salespersons are involved. [7] The other factor that plays a significant role in late stage diagnosis is the use of alternative remedies before seeking professional healthcare advice. [2] Complementary and alternative medicine have attracted great attention during the last few decades. [10] Despite the fact that in many countries educational training is not necessary in order to own an herbalist's shop, many people consider herbalists as expert health counselors. [2] Relevant studies have defined that use of herbal medication has a significant correlation with patient delay for professional consultation; this is an independent predictor of prolonged patient delay.[11] Traditional herbal medication use has been significantly associated with prolonged patient delay (hazard ratio [HR] 0.46, 95% C.I. 0.28–0.76) and also prolonged total delay (HR 0.45, 95% C.I. 0.27–0.74). [12] Since nearly 60% of oral cancers are diagnosed at stage III or IV in Iran,[11] an urgent need is sensed for surveying the reasons of this delay. Therefore, the aim of this study was to investigate how community pharmacists, community pharmacy assistants and herbalists have been offering advice to patients seeking guidance on potentially malignant oral ulcers. The most relevant OTC (over-the-counter) preparations and herbal remedies which were prescribed to the patients were also assessed.

## Methods and Materials:

A cross-sectional study by the standardized simulated patient approach was undertaken to investigate the recommendations given to a potential cancer patient at pharmacies and herbalists' shops in Rasht, capital city of Gilan province located in North of Iran, with 622, 209 populations unevenly distributed across 180km2 area during March 2014. Annual percent change (APC) for oral and pharyngeal cancer was 1.36%. Age standard rate (ASR) was 3.5 and 2.04 per 100 000 among males and females in the mentioned county.[13] The ASR is a wighted mean of the age-specific rates; the weights are taken from population distribution of the standard population. The most frequently used standard population is the World Standard Population.

Annual Percent Change (APC) is one way to characterize trends in cancer rates over time. This means that cancer rates are assumed to change at a constant percentage of the rate of the previous year.

Chemists' addresses and phone numbers were obtained from Gilan pharmacists association, and herbalist shops' data were retrieved from web search. A total of 126 pharmacies and 14 herbalist's shops were identified and visited. Simulated patient/mystery shopper method was used where an individual interacts with the interviewee ac-

cording to a previously prepared script: The introductory statement was "My father is 63 years old and he is a smoker who has a painful ulceration on his tongue for about 6 months which wasn't painful at first but is painful now. What would be your recommendation?" [2,5,6,7,8,9]

The responses from pharmacies and herbalist's shops staffs were noted and transferred to data sheets. The recommendations given by pharmacists, pharmacy assistants, and herbalists were reported separately and then grouped (respond rate). Recommended therapies and their administrations were also recorded. [2, 7] Response rate was estimated for each item in the checklist.

## Results:

In this study, 126 community pharmacies and 14 herbalist's shops were visited. The results showed that pharmacies referred patients to a physician (42%), a dentist (28.6%) and one or the other (2.4%) as the main recommendation. Also, 10% of pharmacies prescribed OTC drugs only and 11% recommended medications in combination with referral to a medical or dental practitioner for guidance. In herbalist's shop, referring to a physician comprised 7.1% of cases and there were no referral to dentists. Recommendations of pharmacists, pharmacy assistants and herbalists on the management of an elderly person with a persistent oral ulcer are summarized in Table 1.

**Table 1- Recommendations of pharmacists, pharmacy assistants and herbalists for the management of an elderly person with a persistent oral ulcer**

| Answer | Pharmacist n (%) | Pharmacy assistant n (%) | Herbalist n (%) |
|---|---|---|---|
| Referral to a physician | 11 (8.73%) | 42 (33.3%) | 1 (7.1%) |
| Referral to a dentist | 14 (11.1%) | 22 (24.2%) | 0 |
| Referral to a dentist or physician | 1 (0.8%) | 2 (1.58%) | 0 |
| Prescribing an OTC medication | 4 (3.17%) | 9 (7.14%) | 11 (78.6%) |
| Prescribing an OTC medication and referral to a dentist/physician | 2 (1.58%) | 12 (9.52%) | 0 |
| Asking to see the patient | 3 (2.38%) | 4 (3.17%) | 2 (14.3%) |

.OTC: over-the-counter

The most frequent OTC medications recommended at pharmacies were "Persica" mouthwash (38.4%) and Triamcinolone paste (15.4%) while in herbalist's shops there were Glycyrrhiza glabra (45.4%) and Mentha piperita (18.2%) (Table 2 & 3).

**Table 2- Most frequent recommendations of pharmacists and pharmacy assistants for treatment of a persistent oral ulcer**

| Medication | Dosage form | n (%) |
|---|---|---|
| Persica | Mouthwash | 5(38.4%) |
| *Triamcinolone* | Paste | 2 (15.4%) |
| *Triamcinolone+Persica* | Paste+ Mouthwash | 2 (15.4%) |
| Antihistamine | Tablet | 1 (7.7%) |
| *Triamcinolone+Persica+ nystatin* | Paste+ Mouthwash | 1 (7.7%) |
| *Antibiotic* | Tablet or Capsule | 2 (15.4%) |

**Table 3- Herbalists' most frequent recommendations for treatment of a persistent oral ulcer.**

| Medicinal Plant | n (%) |
|---|---|
| *Glycyrrhiza glabra* | *5 (45.4%)* |
| *Mentha piperita* | *2(18.2%)* |
| *Matricaria chamomilla* | *2(18.2%)* |
| *Myrtus communis* | *1(9.1%)* |
| *Eugenia caryophyllata* | *1(9.1%)* |

As shown in Table 4, General Practitioner (56.6%) received the highest level of referral among physicians while General dentist (66.7%) and Oral and maxillofacial medicine specialist (19.4%) received most of the referrals among dental specialists.

**Table 4- Most frequent patient referrals from community pharmacies in case of a persistent oral ulcer**

| Referral to a physician | n (%) | Referral to a dentist | n (%) |
|---|---|---|---|
| General Practitioner | 30 (23.8) | General dentist | 24 (19.04) |
| internist | 16(12.7) | Oral and maxillofacial Medicine Specialist | 7 (5.55) |
| Dermatologist | 2 (1.58) | Periodontist | 3 (2.38) |
| Ear, nose and throat specialist | 5 (3.96) | | |

## Discussion:

Since early detection of oral cancer is important in increasing the rate of survival, the role of community pharmacies as the first place at which the patients with oral ulcer seek advice, is significant. In some African countries they provide services to over 80% of the population for achieving the goals of primary health care. The knowledge of the mentioned community is assumed to be eligible in the diagnosis, prevention or elimination of a physical, mental or social disease by World Health Organization (WHO, 1978a).[15] Various studies have proposed that multiple factors have impact on diagnosis delay. The main factor is delay in seeking consultation or making an appointment. In societies with low socioeconomic status and impaired knowledge about delay in cancer diagnosis, herbalists may be predictors in delayed diagnosis.[12] Pharmacy assistants with insufficient knowledge are always the first to face the patient's question. If patients had not received any prescription from their doctor, they would usually prescribe some OTC drugs.

In the present study, total referral rate by pharmacies equaled 73% comprising referrals to a primary medical care system such as a dentist, a physician and one or the other. Furthermore, Rogers et al have reported that 69% of pharmacies had the same advice for patients with an ulcer in his mouth for 4 weeks. [5] In contrast, Scully et al, reported that less than 10% of community pharmacies referred patients to a doctor or a dentist and only 30% of the patients were referred in a similar study conducted in the USA.[8] In pharmacies, 74.3% of patients were properly referred to a primary medical care system by pharmacists while this percentage

was 72.5% for pharmacy assistants. These results indicate that pharmacy assistants are aware that an appointment with a doctor or dentist is imperative for patients with a persistent oral ulcer. Our results suggested that pharmacy assistants in this study had a higher level of knowledge on the necessity of referring the patients to a doctor or dentist compared with the results of a study by Evans and Gibbons [8] who have reported that 82% of community pharmacists and 35% of pharmacy assistants had advised the patient to refer to a doctor or dentist.

According to our data, only 7.1% of herbalists' shops advised patients to visit a doctor and none of them recommended an appointment with a dentist. The results showed that herbalists regularly offer OTC medications to patients with oral ulcer (78.6%) instead of referring them to primary care clinics. In a similar study by Varela-Centelles et al, only 2.6% of herbalists suggested the correct referral system and 86.4% recommended OTC remedies instead. [2] Also the results of the study by Adebola et al showed that only 33.3% of herbalists were informed of oral cancer in Nigeria, [1] while higher levels of awareness were reported in the United State (56%). Nearly 10% of the pharmacies surveyed in this study recommended OTC drugs only and 11% prescribed medications in combination with referral to a medical or dental practitioner for consultation. In another study by Evans and Gibbons, 17.7% of pharmacies prescribed OTC medications alone and 36.3% suggested medications in combination with referral to medical care professionals.

Unfortunately, this is a common concern in many countries where advice from the primary health care interface cause delay in diagnosis. The mentioned hindrance not only occurs in the case of oral cancer, but also may happen in other cancers with nonspecific initial signs. The most frequent OTC recommendation at pharmacies (38.4%) was "Persica" mouthwash which is made of ethanol extracts from three medicinal plants including Salvadora persica (30%), Achillea millefolium (25%) and Mentha spicata (45%) (Table 2).[16,17] In herbalists' shops Glycyrrhiza glabra (45.4%) was the most common remedy prescribed for oral ulcers (Table3). Though many indigenous plants have been used to cure bacterial or fungal diseases,[18,19] these plants should be prescribed only

by specialists or general practitioners in the treatment of oral ulcers.

Previous studies have shown that oral cancer is mainly a disease of the elderly. [2] For instance, 89% of all oral cancer cases diagnosed in Iran occur in people over 40 years of age with the average age of 61. [14] On the other hand, presenting to herbalists to receive herbal remedies is prevalent among elderly people. [2] Studies have shown that in the USA, 12.9% of elderly patients use herbal medicines. [20] This percentage was 19.1% to 41% in Sweden, 20% in the UK and 15.4% in Spain. [2] Since herbalists generally recommended OTC medications to patients with potentially malignant oral ulcers instead of referring them to primary care clinics, it is apparent that they have potential role in patient diagnostic delay. Considering the fact that herbalists require no educational training in order to own a shop and visit patients in many countries including Iran, urgent need to increase their oral cancer awareness is obvious.

In conclusion, since community pharmacies are easily available to patients with oral ulcer to visit and look for advice, they have a good chance to identify potential oral cancer cases in early stage and refer them to primary care clinics for more thorough evaluations. In this study, the general awareness of pharmacists and their assistants was estimated to be equally high. Nevertheless more strict educational strategies are recommended for pharmacists and their assistants to improve consultation and referral policies.

## Conflicts of interest
No conflict of interest has been declared.

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