Skin cancer: BCC, SCC, MM and KS (a term of 7 years in Loghman Hakim Hospital)

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ABSTRACT

Skin cancer has a broad and burdensome impact on the health and well-being of Iranian and account for substantial health care costs to the nation. The first most common form of skin cancer is basal cell carcinoma (BCC); followed by the squamous cell carcinoma (SCC) and the incidence of malignant melanoma (MM) is lower but is fatal. Kaposi sarcoma (KS) is a tumor caused by human herpes virus 8. In this study, prevalence and incidence of four skin cancer (BCC, SCC, MM and KS) was investigated by considering to risk factors include age, sex, skin color, sun exposure levels, Lesion location, occupations and timeout to seek treatment. In this study, 95 patients with skin cancers registered in Loghman Hakim hospital during the 7 years from 1998 to 2004 were analyzed. Result depicted that BCC is the most common skin cancer in both sexes and in all types male incidence was significant. Age prevalence of all was about 50 to 80 years. The most common sites of tumor involvement in BCC and SCC were head and neck; KS was lower limb and MM had sporadic lesions. Almost all of patients referred to diagnosis or treatment 1 to 5 years after the initial onset of the disease. Occupations of the majority of patients with skin cancer were farmers. More patients lived in the area with warm and dry climate. In sum up, the skin cancer risk factors are included older ages, residence of warm and dry regions, be male and farmer, and most importantly rate of exposure to sunlight can influence lifestyle of patients that everyone can easily take to protect in different ways.

Key words: Dermatology; Skin cancer; Melanoma; Basal cell carcinoma; Squamous cell carcinoma; Kaposi sarcoma; Prevalence

INTRODUCTION

Skin cancer is the most common form among all cancer types that statistically demonstrate more than 3.5 million skin cancers are diagnosed each year in the United States [1]. In the UK in 2010, 12,818 people were diagnosed with malignant melanoma, and about 100,000 people were diagnosed with non-melanoma skin cancer. There were 2,746 deaths from skin cancer, 2,203 from malignant melanoma and 546 from non-malignant melanoma [2]. Skin cancer incidence statistics in Iran have not yet been precisely checked.

There are 2 main types of skin cancers: keratinocyte cancers (BCC and SCC) and melanomas. Basal and squamous cell skin cancers are by far the most common cancers of the skin. They develop from keratinocytes, the most common cells in the skin. Melanomas are cancers that develop from melanocytes, the cells that make the brown pigment that gives skin its color. Melanocytes can also form benign (non-cancerous) growths called moles [3,4]. There are other types of skin cancers as well, but they are much less common like kaposi sarcoma (KS) that is a tumor caused by Human herpes virus 8, also known as kaposi sarcoma-associated herpesvirus. It became more widely known as one of the AIDS-defining illnesses in the 1980s. KS is a systemic disease that can present with cutaneous lesions with or without internal involvement. KS lesions are nodules or blotches that may be red, purple, brown, or black, and are usually papular (palpable or raised) [5,6]. They are typically found on the skin, but spread elsewhere is common, especially the mouth, gastrointestinal tract and respiratory tract. Growth can range from very slow to explosively fast, and is associated with significant mortality and morbidity [7] .

It is important to identify these types of skin cancer apart, because they are treated differently.
BCC and SCC are the most common cancers of the skin. Both BCC and SCC are found mainly on parts of the body exposed to the sun, such as the head and neck. These cancers are strongly related to the amount of sun exposure a person has had. BCC and SCC are much less likely than melanomas to spread to other parts of the body and become life threatening. Still, it is important to find and treat them early. If left untreated, they can grow quite large and invade into nearby tissues and organs, causing scarring, deformity, or even loss of function in some parts of the body. Some of these cancers (especially SCC) may even spread if not treated, and rarely can they be fatal [8-10].
Melanomas can occur anywhere on the body, but are more likely to start in certain locations. The trunk (chest and back) is the most common site in men. In women, the legs are the most common site. The neck and face are other common sites [9]. Melanomas are not as common as BCC and SCC, but they can be far more serious. Like BCC and SCC, melanoma is almost always curable in its early stages. But if left alone, melanoma is much more likely to spread to other parts of the body, where it can be very hard to treat [8].
Most skin cancers are caused by too much exposure to ultraviolet (UV) rays either exposure comes from the sun or indoor tanning beds. Everyone's skin and eyes can be affected by the sun and other forms of UV rays. People with light skin are much more likely to have sun damage, but darker-skinned people, including African Americans and Hispanic Americans, also can be affected. The skin tans when it absorbs UV radiation. The tan is caused by an increase in the activity and number of melanocytes, the cells that make the pigment melanin. Melanin helps to block out damaging UV rays up to a point, which is why people with naturally darker skin are less likely to get sunburned, while people with lighter skin are more likely to burn. Sunburns are thought to increase your risk of skin cancer, including melanoma. But UV exposure can raise skin cancer risk even without causing sunburn. Aside from skin tone, other factors can also affect risk of damage from UV light like had skin cancer before, have a family history of skin cancer, especially melanoma, have lots of moles, irregular moles, or large moles, have freckles and burn before tanning, have fair skin, blue or green eyes, or blond, red, or light brown hair, live or vacation at high altitudes (the strength of UV rays increases the higher up), live or vacation in tropical or subtropical climates, work indoors all week and then get intense sun exposure on weekends, spend a lot of time outdoors, have certain autoimmune diseases, such as systemic lupus erythematous, have had an organ transplant, take medicines that lower immunity, take medicines that make skin more sensitive to sunlight, taking any medicines that could increase sensitivity to sunlight [3,4,8-11].
The present study investigated the relationship between prevalence of skin cancer and associated risk factors in cases registered in Loghman Hakim hospital during study years 1998 to 2004.

MATERIALS AND METHODS

Sampling

During the seven years of the study 95 patients were registered with complications of skin tumors in Loghman Hakim hospital that were 20 males and 75 females, 2 males coincided with two types of cancer. Cancers included basal cell carcinoma (BCC), squamous cell carcinoma (SCC), malignant melanoma (MM) and Kaposi's sarcoma (KS). The histopathology of all patients has been proved their disease.

Associated Factor

The most important variables are examined in cancer patients contain gender, age, tumor location in the body of patients, patient occupation, geographic region of residence of patients and finally the interval time between the primary emerge of tumor and patients refer to diagnoses and treatment.

RESULT

During the seven year period, 95 patients with skin cancer were admitted in Loghman Hakim hospital that 20 were women and 75 were men. As seen in Figure 1, BCC is the most common skin cancer in both sexes and then were SCC, MM and KS respectively. Figure 2 represented the prevalence of disease in gender that illustrated 46 of the 63 BCC patients were male and 17 were female. 24 of the 27 SCC patients were male and 3 were female. There are no female in MM and KS. Age of the cancer patients identified in the diagram of Figure 3.
The most of BCC patients were 60 to 70 years while in SCC is 60 to 80 years. In MM and KS

due to the small number of patients could not correctly age incidence. It is important to say there is no BCC patient less than 30 years. Lesion location in body represented in figure 4. The most common sites of tumor involvement in BCC were 97% of head and neck that the most include the nose, scalp and ears. Most sites of tumor involvement in SCC also were 88.57% of head and neck. In MM was sporadic lesion and in KS involved lower lamb. The time from onset of primary tumor and refer the patient to diagnoses and treatment illustrated in Figure 5. Almost all of patients referred 1 to 5 years after the initial onset of the disease. The diagram in Figure 6 shows that the Career of the majority of patients with skin cancer was farmers. Figure 7 show relationships between the geographical area of residence of patients and climate risk factors of tumorigenesis that revealed more patients live in the area with warm and dry climate, next region was highland and the last one was Caspian moderate.

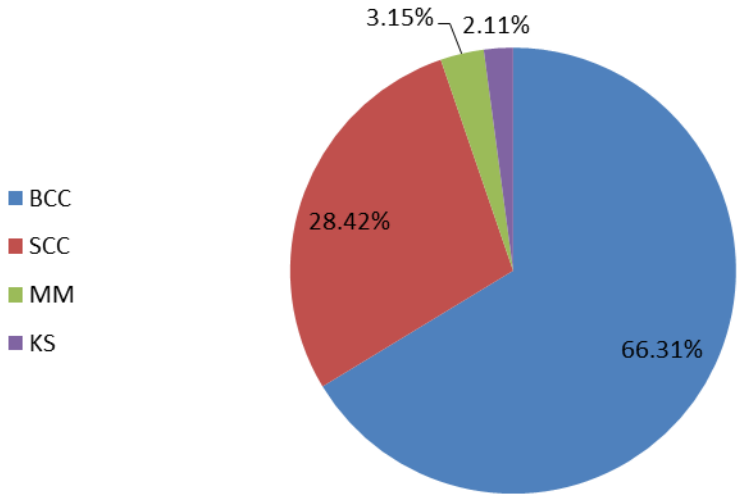

Figure 1. Pie charts of the incidence of skin cancer

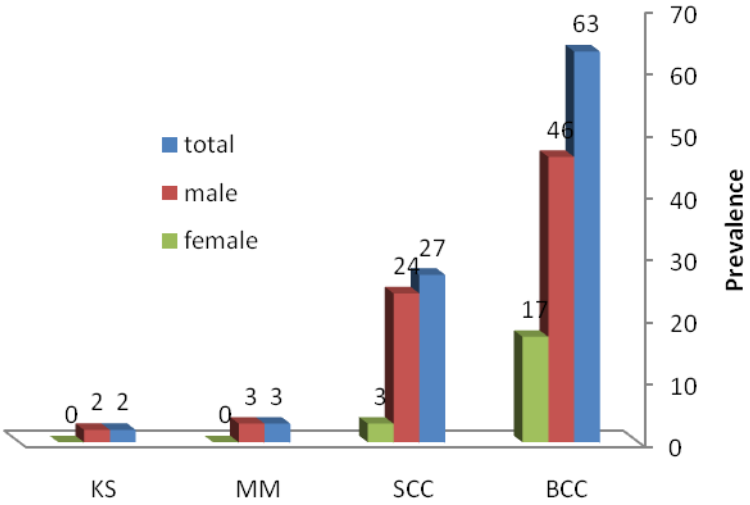

Figure 2. The prevalence of skin cancer in gender

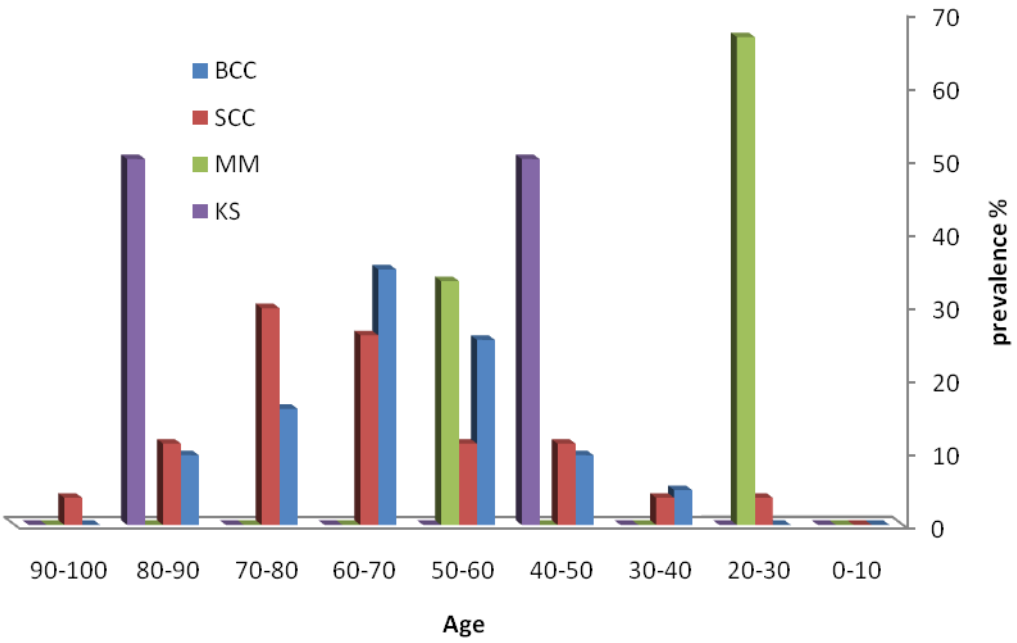

Figure 3. Diagram of the skin cancer patients according to age

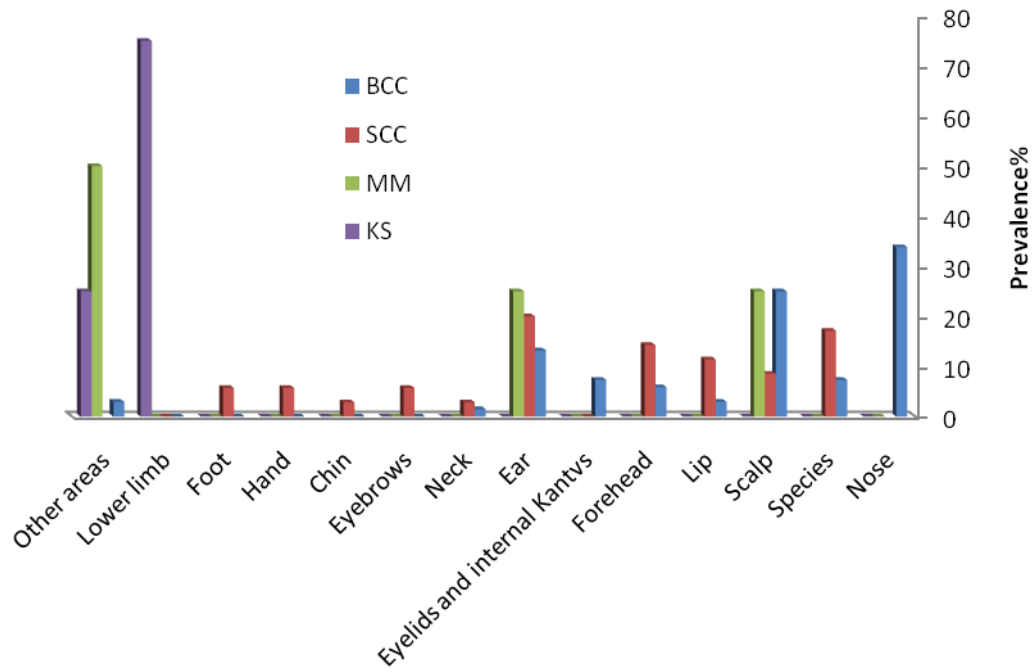

Figure 4. diagram of the lesion distrbution in patients

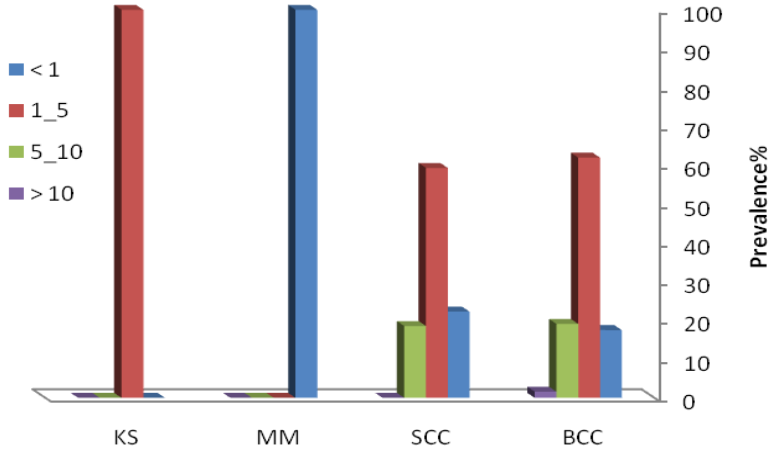

Figure 5. diagram of time interval emerge skin cancer and refer the patients for treatment

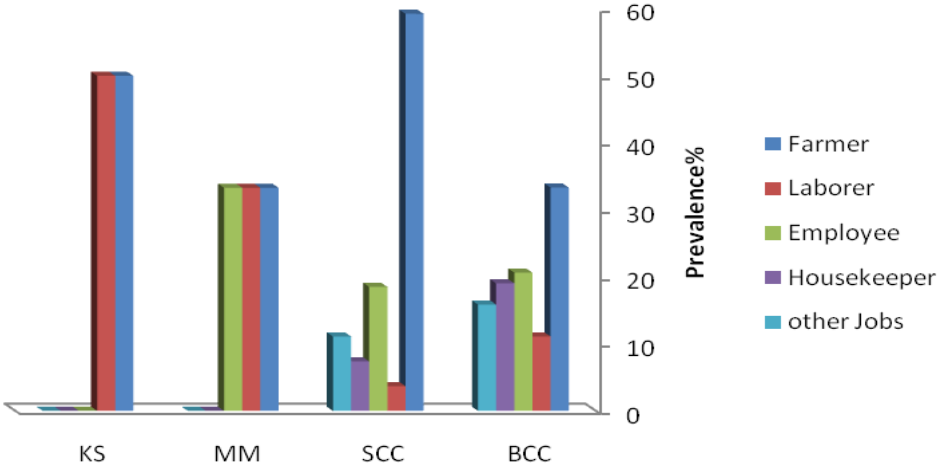

Figure 6. incidence chart of skin cancer based on occupation

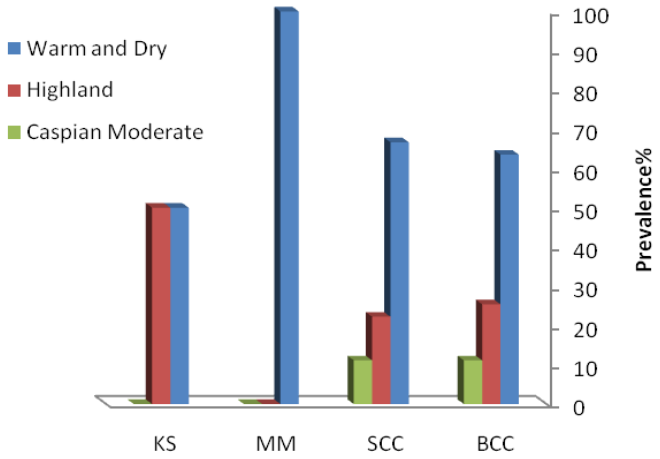

Figure7. charts of prevalence of skin cancer based on geographical area

DISCUSSION

At the start of working on suspected skin cancer samples, attention is necessary to history, medical tests and biopsy of the lesion. The history should include an assessment of disease duration, development, previous treatments of specific injuries, personal or family history of previous skin cancers. History of previous radiotherapy of disease area must be clear. Evidence for Immunodeficiency (organ transplant, blood cancers, treatment with Immunodeficiency and HIV infection) should be specified. Medical tests should include observation and examination of the tumor to determine the exact size and location of tumor in addition to metastasis to close tissues such as muscle or bone [12-14]. So in this study epidemiological and clinical factors in patients with skin tumors that refer to Loghman Hakim hospital were investigated. During 7 years, 95 patients were registered with skin tumors that as seen in figure 1 and 2, BCC were the most common cancer in gender, then illustrated SCC, MM and KS respectively. Although MM accounts for about 5% of skin cancers are the most common cause of death from skin disease. Early detection increases patients' survival. Childhood and adolescence are rare and the most common age is 60 years, but about 40% of cases occur in patients aged less than 40 years [1]. Non-melanoma skin cancers (NMSC) comprise more than one-third of all cancers and are increasing worldwide causing a significant economic burden at the individual and community levels [15]. The most common NMSCs are BCC and SCC, occurring at a ratio of about 4:1 and accounting for about 90% of all skin cancers diagnosed globally [16,17]. It is estimated that between two and three million people are diagnosed worldwide each year, with an average annual increase of 3% to 8% in White populations in Australia, Europe, the United States, and Canada over the last 30 years [18, 19]. Recently assay disclosed that in 6 geographical regions in Iran over the study period, 30701 cases of cancer were identified, rising from 2353 in 2000 to 8484 in 2005 [20]. Figure 2 also indicates that most of these patients were male. Previous study by Heidari M et al. about relationship between the incidence of skin cancer in Iran and gender elucidate the male-to-female ratio was 1.6 [20]. Some of risk factors for NMSC include male sex, older age and fair complexion [21]. Age of the cancer patients as identified in the diagram of Figure 3 revealed that the most of BCC patients were 60 to 70 years while in SCC is 60 to 80 years. In MM and KS due to the small number of patients could not correctly discuss. There is not present any of the patients under age 30. UVA rays can damage cells' DNA in age cells so not only are linked to long-term skin damage such as wrinkles, but are also thought to play a role in some skin cancers. The global incidence rates vary by skin complexion and geographical region and are expected to continue to rise in the coming years, due to growing exposure to UV sunlight associated with increased sun-seeking behaviors and depletion of stratospheric ozone [22, 23].

BCC and SCC are most often found in areas that get exposed to a lot of sun, such as the head, neck, and arms, but they can occur elsewhere. Look for new growths, spots, bumps, patches, or sores that don't heal after several weeks. BCC often look like flat, firm, pale areas or small, raised, pink or red, translucent, shiny, pearly areas that may bleed after a minor injury. They may have one or more abnormal blood vessels, a lower area in their center, and blue, brown, or black areas. Large basal cell carcinomas may have oozing or crusted areas [1, 3].

SCC may look like growing lumps, often with a rough, scaly, or crusted surface. They may also look like flat reddish patches in the skin that grow slowly. Both of these types of skin cancer may develop as a flat area showing only slight changes from normal skin [4]. In our study lesion location in body as represented in figure 4, the most common sites in BCC were 97% of head and neck that the most include the nose, scalp and ears and also in SCC were 88.57% of head and neck. UV sunlight is the most risk factor for MM as like BCC and SCC. The most important warning sign for melanoma is a new spot on the skin or a spot that is changing in size, shape, or color. Another important sign is a spot that looks different from all of the other spots on skin [1, 9]. In MM patients have seen sporadic lesions in two of three and their one suffering from recurrent skin lesions on the scalp area and behind the ear with lymphadenopathy. Lesions in our two KS patients involved their lower limbs. Commonly affected areas include the lower limbs, back,

face, mouth, and genitalia. The lesions are usually as described, but may occasionally be plaque-like (often on the soles of the feet) or even involved in skin breakdown with resulting fungating lesions. Associated swelling may be from either local inflammation or Lymphoedema [24, 25].

The time from onset of primary tumor and refer the patient to diagnoses and treatment illustrated in Figure 5. Almost all of patients referred 1 to 5 years after the initial onset of the disease. This suggests that skin tumors are not detected in the early stages due to lake of consideration lesion skin signs. The diagram in Figure 6 shows that the career of the majority of patients with skin cancer was farmers. Occupational exposure to ultraviolet radiation and risk of NMSC in a Multinational European Study was investigated by Surdu S. et al. The lack of an increased NMSC risk from occupational exposure to natural UV radiation, and significant protective effects against NMSC among participants with a light skin complexion, may be linked to a modification of behaviors towards adopting personal sun protection measures. Although sun protection behaviors vary considerably by occupation, sex, age, education, and local sun-related habits, a number of studies reported that outdoor workers and individuals with sun sensitive skin types are more likely to employ sun safety practices such as wearing a hat or protective clothes [26-29]. Furthermore, the weight of evidence suggests a higher risk of BCC in relation to intermittent intense sun exposure, and recreational sun exposure early in life compared to chronic and occupational exposures [30, 31]. Chronic exposure such as that in the workplace appears to be more closely related to SCC risk. Several studies found a relationship between SCC development and long-term workplace cumulative exposure to sun radiation [32, 33].

Figure 7 show relationship between the geographical area of patients' residence and climate risk factors that revealed more patients live in the area with warm and dry climate. Investigators previously reported large spatial differences in the NMSC risk among White populations, with reported incidences being about 5-fold and 7-fold higher in the U.S. than in Europe, and about 50-fold and 100-fold higher in Australia compared to Europe [34]. Proximity to the equator is known to be a strong predictor of skin cancer risk (i.e., decline of NMSC rates with increasing latitude due to lower ambient UV radiation), and thus the Central European location of this study may explain in part the findings [1]. A recent meta-analysis of studies on BCC occurrence in relation to occupational sun exposure confirmed the strong inverse association between geographical latitude and the risk of BCC [35].

The epidemiology of skin cancer in Iran is not well understood due to exclusion from most Iranian cancer registries. Finally we can conclude that several environmental factors such as exposure to sunlight longtime, geographical area as warm and dry or occupation as farmer, older age and male gender could be involved in the development of skin cancer and the number of skin cancer cases has been going up over the past few decades. Since sunscreen is effective and thus recommended to prevent skin cancer so avoiding sunburning, wearing protective clothing, sunglasses and hats, and attempting to avoid sun exposure or periods of peak exposure.

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