

EPIDEMIOLOGICAL STUDY OF DOG BITE CASES IN BAGHDAD CITY DURING 2010⁺

دراسة وبائية لاصابات عضة الكلب في مدينة بغداد خلال عام ٢٠١٠

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Abstract

Exposure to dog bites is an important public health problem , these bites not only cause increase morbidity and mortality but also loss of workers days and cost for treatment , so a cross - sectional retrospective study was carried out during January (2011) to determine the epidemiological profile of dog bite victims registered in the Anti-Rabies clinic of (Pasteur Institute) and who live in Baghdad city during (2010) were reviewed data collection then were analyzed by using simple descriptive statistics .

The results show that the total number of dog bite victims in Baghdad city during (2010) was 1914 , (79.2%) attended the clinic within the first three days post-exposure with an epidemiological profile which consisted mainly of males (88.5%) , people at risk were mainly children under ten years of age (26.8%) , living in Al- Risafa district (66.6%) . Considerable percentage (74.6%) had injuries involved the lower limbs but a clear seasonal variation in dog bite attacks does not exist .

Recommendation was suggested to enhance public awareness through health education , institution of intervention program targeted to control stray dogs and to enhance active animal bite surveillance studies to estimate the true burden of the disease.

Key words : Epidemiological , dog bite , Baghdad / Iraq .

المستخلص:

التعرض لعضة الكلب هي احدى مشاكل الصحة العامة المهمة ، هذه العضات لاتسبب فقط ازدياد النسبة المراضة والوفيات ، بل ايضا تسبب خسائر مادية من خلال فقدان ايام العمل للعمال وتكاليف العلاج ، لذلك انجزت دراسة مقطعية رجعية في شهر كانون الثاني عام (٢٠١١) لغرض تحديد الخصائص الوبائية لضحايا عضات الكلاب المسجلة في معهد باستور (عيادة الوقاية من داء الكلب) للسكان في محافظة بغداد فقط خلال عام (٢٠١٠) والتي تمت مراجعتها ثم تحليل البيانات من خلال استخدام احصائيات وصفية بسيطة .

اظهرت النتائج بأن العدد الكلي لضحايا عضات الكلاب في محافظة بغداد خلال عام (٢٠١٠) بلغت (١٩١٤) حالة (٧٩,٢٥%) منهم راجعوا المركز المذكور خلال الايام الثلاثة الاولى بعد التعرض ، كانت

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لهم خصائص وبائية منحصرة اكثرها في فئة الذكور (٨٨,٥%) الاشخاص المعرضون للاصابة كانوا اكثر نسبة ضمن فئة الاطفال دون العشر سنوات (٢٦,٨%)، الساكنين في قطاع الرصافة (٦٦,٦%). ان نسبة ملحوظة منهم (٧٤,٦%) لديهم جروح في الاطراف السفلى ولكن لم يتبين وجود تغيرات موسمية واضحة في التعرض لعضات الكلاب .

تم تقديم التوصيات لزيادة وعي الناس من خلال التثقيف الصحي ، اعداد برامج تنفيذية موجهة لابادة الكلاب السائبة وكذلك التشجيع على اجراء دراسات مسحية فعالة لمعرفة الحجم الحقيقي للمشكلة.

Introduction

Every day a number of people fall victims to dog bite [1]. According to WHO report , ten million people are bitten by animals around the world ,considered for prophylaxis and treatment against rabies and almost (55,000) people die from this disease annually [2].

The higher rates of morbidity and mortality in Asia were observed among developing countries ,where animals specially dogs have poor sanitation [3]. Human rabies is practically a 100% fatal disease [4] , it is endemic in Iraq specially in rural areas [5] . Dogs are the main reservoir , it is caused by a virus that gets into the human – body usually from an animal bite , scratch , or licks on broken skin or mucous membranes [4].

Dog bites are a serious health problem that cause both physical and emotional damage to victims and considerable cost to communities [6] . with day to day industrialization and increasing population ,area under forest is decreasing tremendously and wild animals are moving towards residential area , because of such proximity to animal , animal bites are also becoming commoner [7]. In Iraq the incidence rate of dog bites during 2007 is (57/ 100.000) there is about (17000) dog bites registered and the real number is more [5] The profile of bites also varies from country to country and region to region within country [7]. That 's why the researchers aimed to estimate the extent of the problem and to verify the epidemiological characteristics of people bitten by dogs in Baghdad city during (2010) in order to plan for prevention and enhance management strategies .

Subjects and Methods

A retrospective descriptive study was carried during January (2011) in the Anti-Rabies clinic (Pasteur Institute) where the subjects received anti-rabies post – exposure prophylaxis after dog and other animal bites .

All cases registered as dog bites reported between January and December 2010 and living in Baghdad city were reviewed , the following data pertaining to victims were studied gender ,age , residency exposure date , reporting date and lag time , and body location of bite ,all animals were designated as stray dogs . The collected data were analyzed by using simple descriptive statistics by using percentages and proportions and graphical presentation by Bar charts .

Results

The total number of dog bite victims in Baghdad city during 2010 equal to 1914 , they were distributed as 1695 (88. 5%) males and 219 females (11.4%) , the male to female ratio was 7.7: 1

Table (1) Distribution of dog bite victims regarding their residency

| Residency Area | Sex | | No | Percentage % |
|----------------|------|--------|------|--------------|
| | Male | Female | | |
| Risafa | 1158 | 117 | 1275 | 66.6 |
| Karch | 537 | 102 | 639 | 33.3 |
| Total | 1695 | 219 | 1914 | 100% |

The results in table (1) show that the predominance of dog bite victims living in Al- Risafa district (66.6%) compared to Al- karkh district (33.3%) , with a ratio nearly 2:1

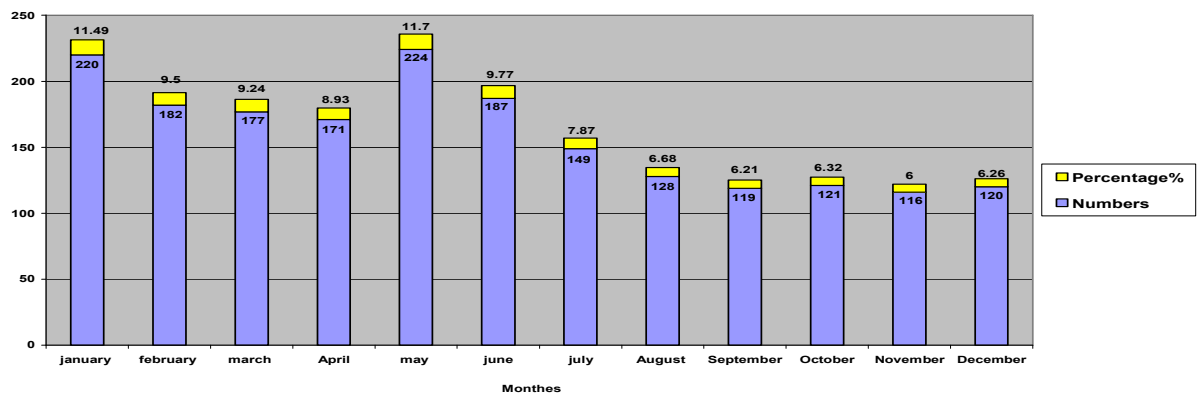


Figure (1) Monthly distribution of dog bite victims in Baghdad city during 2010

The results in figure (1) show that the highest number of dog bite victims was during May (11.7%) followed by January (11.4%)

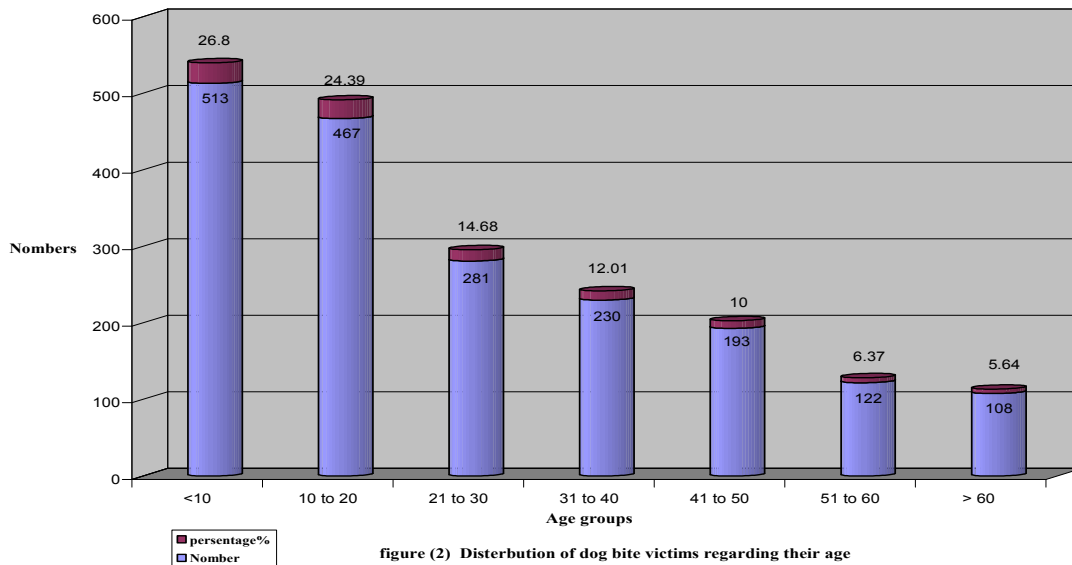


figure (2) Distribution of dog bite victims regarding their age

The results in figure (2) show that the highest affected age groups was children under (10) years of age , while the lowest affected age groups was these older than (60) years old , the results also showed that the number of dog bite cases decreased as age was increased

Table (2) Distribution of dog bite victims regarding body site of bite

| Body localization of bite | No | Percentage % |
|---------------------------|-------------|--------------|
| Lower limbs | 1428 | 74.60 |
| Upper limbs | 358 | 18.7 |
| Head and neck | 60 | 3.13 |
| Total | 1914 | 100% |

The results in table (2) show that considerable percentage (74.60%) of dog bite injuries involved lower limbs while trunk was the lowest (3.55%) injured area .

Table (3) Distribution of dog bite victims regarding their lag time .

| Lag time | Numbers | Percentage % |
|--------------|-------------|--------------|
| < 3 days | 1517 | 79.25 |
| 3- 6 days | 308 | 16.09 |
| > 6 days | 89 | 4.64 |
| Total | 1914 | 100% |

The results in table (3) show that the highest percentage (79.60%) of victims attended (Pasteur Institute) for the management of dog bite injury within the first three days post exposure.

Discussion

People of all ages, races and sexes are potentially at risk for dog bite ; it is unlikely that dog discriminate [8] . The total number of dog bite victims estimated in Baghdad city during (2010) was 1914 cases and the real number is more because a number of people do not seek medical treatment post – exposure specially regarding small bites , the lack of standard reporting in Iraq makes accurate estimate of the exact incidence of dog bite injuries in our study is difficult , actually the real problem comes specially from stray dogs which their number are increasing because of weak killing attacks implemented due to security condition of the country [5] .

The epidemiological profile of dog bite victims in Baghdad revealed that men were affected more than women , this could be explained due to the fact that men are more likely to go out of their homes for work as compared with women , this finding was nearly compatible to [9] in Benin city (Nigeria) with male to female ratio 7.2 :1 [10]. Attributed sex differences that women are more frequently bitten by cats , whereas men are more often bitten by dogs , also many studies [11,12,13] showed the predominance of male victims among people living in Khuzestan ,India and Canada respectively , People at risk were mainly children below ten years ,this finding is compatible to many authors [14,15,16] , this attributed due to there small size and their inexperience with animals ,that they may not realize that playful actions may cause an angry or defensive reaction from a dog , while Stull WJ &

Hodge RR found that dog bites are more commoner with the age group (15-45) years as they are considered to be the most agile group [17] .

The predominance of dog bite victims in Al – Risafa compared to all Al – karkh district , may be related to many factors such as high number of stray dogs , especially around sewage canals , high population density. in Spain reported that population density did exert a significant effect on the incidence of dog bites [18].

It seems that there is no evident monthly variations towards the exposure to dog bites , as dogs being warm blood animals with temperature homeostatic mechanism , have activities relatively dependant in of temperature [19].

In Australia found at least no positive relation seems to exists between the full moon and dog bite exposure [15], while the profile of patient living in Ghana [20] and Chandigarh , India [21] showed maximum number of patient during summer months .

Dog bite injuries mainly involved the lower extremities , this probably because the legs being considered the closet site to be attacked , our results contradict the findings of Sheikholeslami ZN who found that dog related lesions was involving the upper extremities [22] .

The majority of dog bite victims attended study location within the first three days post- exposure, this indicate public awareness and fear of complications of the problem , while conducted an analysis of dog bites and the mean lag time for the period ranged 4.4 to 5.6 days [17].

Conclusion

From results of the study , the followings were concluded

- 1- The persistence of dog bites as public health problem in Baghdad city
- 2- An accurate estimate of the incidence of dog bite cases in Baghdad city is difficult as many dog bites are under reported
- 3- The total number of registered dog bite victims in Baghdad city during (2010) was 1914
- 4- The epidemiological profile of dog bite victims who attained mainly within the first three days post – exposure at the studied location consisted mainly of males , children under the age of ten years , living in Al- Risafa discrete and with injuries involving the lower limbs .
- 5- A clear seasonal variation in dog bite attacks does not exists

Recommendations

- 1- All dogs and other animal bites should be registered and informed to the Center of Disease Control (CDC) in Baghdad city
- 2- Active animal bite surveillance studies as required to determine the true burden of dog bite in Baghdad and other provinces of Iraq .
- 3- Health education to enhance public awareness regarding the problem and to avoid contact with stray dogs .
- 4- Initiation of intervention programs targeted to killing stray dogs .

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