



Epidemiological profile of import malaria in the area Laayoune Sakia Hamra

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Abstract : Malaria is rampant worldwide in endemic-epidemic form ; Since 2005 no cases of indigenous malaria have been detected in Morocco . This pathology does not exclude the armies, because of the multiplication of humanitarian and military missions in endemic malaria. The purpose of this work is to study the epidemiological profile of malaria imports into the armies at the level of the Laayoune Sakia-Hamra region.

This is a retrospective descriptive study that took place at the Central Laboratory - 3rd Laayoune Military Hospital - during a 10-year period from January 2011 to January 2021. this study is the first of its kind at the level of this region. Age, sex, country visited, plasma species taken chemoprophylaxis and treatment were noted for this target population (active military). there was a prevalence of 31.11% (450 applications of which 140 were positive); Plasmodium falciparum is the most prevalent species with 55.71% of cases , 49% of patients stayed in the Democratic Republic of Congo, and only 19% were fully compliant with all prophylactic measures, the age group most affected was between 21 and 30 years. Patients are treated with mefloquine for falciparum; chloroquine in case of access to other species and intravenous quinine in case of pernicious access.

This epidemiological study of import malaria conducted at 3° Laayoune Military Hospital made it possible for the first time in this region to detect the profile of our military patients and to detect failures in follow-up prophylaxis.

Keywords: epidemiology; imported malaria; Army; chemoprophylaxis ; Laayoune; Morocco

Introduction :

Malaria is rampant worldwide in an endemic-epidemic form. It is the first communicable and deadly disease; every year two million people die from it, 90% of which occur in Africa [1,2].

Since 2005, no cases of indigenous malaria have been detected in Morocco [3]; in May 2010, the World Health Organization (WHO) listed Morocco as a malaria-free country.

This pathology does not exclude the armies, because of the proliferation of humanitarian and military missions in malaria-endemic areas, it particularly affects units under the aegis of the UN, which makes the fight against malaria a permanent challenge for military health.

The aim of this work is to study the epidemiological profile of malaria imports into the armies at the level of this region .

Materials and methods:

This is a retrospective descriptive study that took place at the Central Laboratory - 3rd Laayoune Military Hospital - during a 10-year period from January 2011 to January 2021. this study is the first of its kind at the level of this region.

Included are all Moroccan soldiers for whom a search for Plasmodium in blood is requested.

The diagnosis is microscopic [4], thick gout and thin blood smear make up this diagnosis. Age, sex, country visited, plasma species taken chemoprophylaxis and treatment were noted. Positive cases were handled by Internal Medicine Department and Resuscitation Department for complicated cases.

Results :

During our study period 450 applications were received including 140 positive cases which implies a prevalence of 31.11% all patients are male. The annual incidence of cases varies from 4 (2020) to 29 (2013) with an average of 14 cases per year; Plasmodium falciparum is by far the most prevalent species with 55.71% of cases , Plasmodium ovale represents 35.71% with 50 cases and 12 cases of Plasmodium vivax or 8.57% (Figure 1).

The average age is 33 years and the most affected age group was between 21 and 30 years (Figure 2).

As far as the place of stay is concerned, 49% of patients stayed in the Democratic Republic of the Congo (DRC), 39% in Côte d'Ivoire and 12% in central Africa; the average length of stay is 181 days (Figure 3).

The use of mefloquine in chemoprophylaxis was respected in 120 patients or 85.71%, however 57.14% of the cases applied physical protection namely nets and repellents, and finally 19% followed well the set of prophylactic measures.

Patients are treated with mefloquine for falciparum; chloroquine in case of access to other species and intravenous quinine in case of pernicious access.

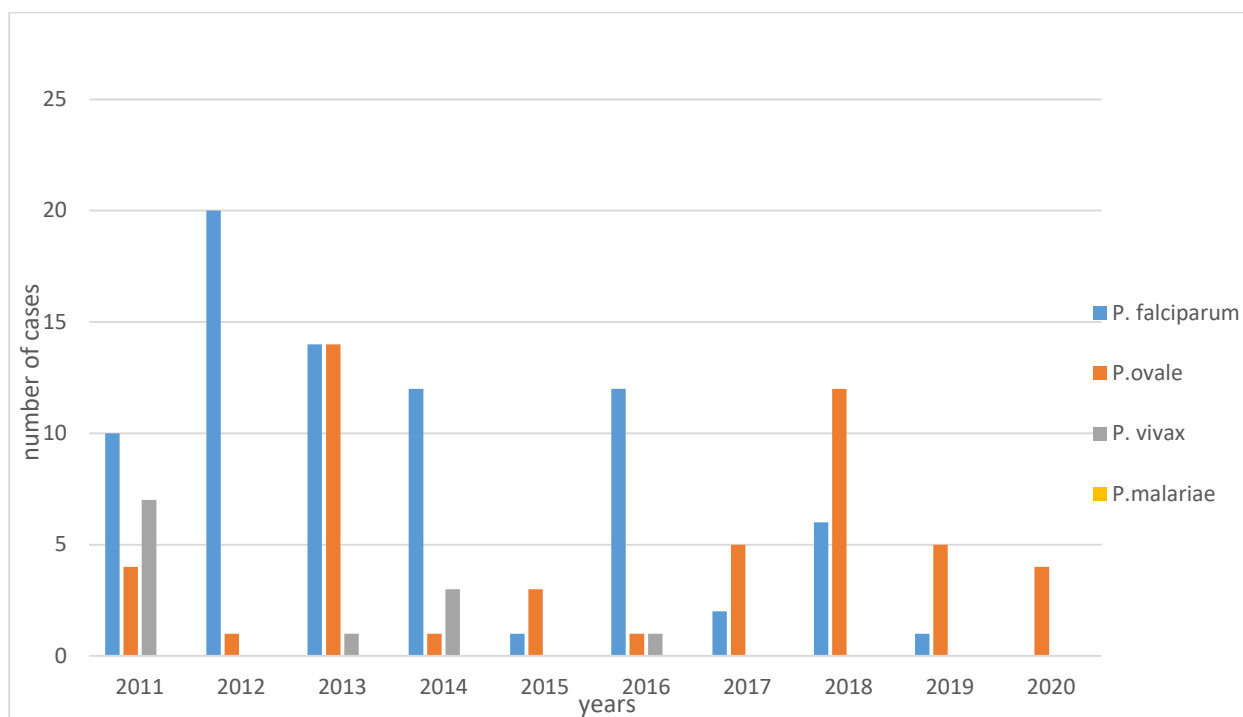


Figure 1: Annual distribution of positive cases by identified plasmodial species

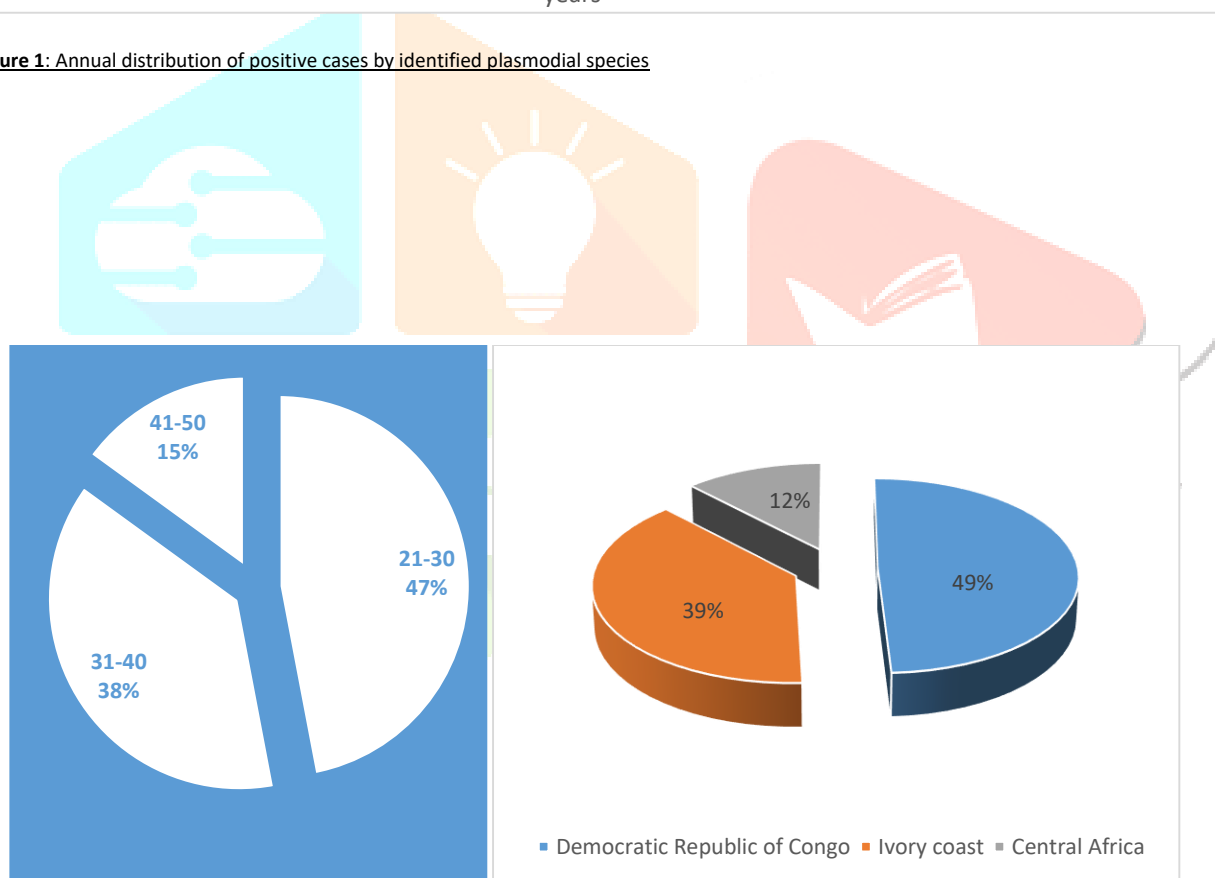


Figure 2: Distribution of cases by age group

Figure 3: Distribution of Imported Cases in the City of Laayoune – Morocco, By Country of Stay

Discussion :

With an average annual incidence of 14 cases per year and also peaks observed in 2011 , 2012, and 2013 this can be explained by the increase in the missions of the Royal Moroccan Army in the framework of the operations of the United Nations brought to maintain the peace in Africa .

In our study, the diagnosis of cases is made all year long because the population is military, unlike most authors who report that the diagnosis is made during the period from August to October this is explained by the departure of tourists in endemic areas during school holidays [5.6].

Our population is male with an average age of 33 years , this male predominance is confirmed by studies carried out by Lénaïck O et al on malaria in the French armies and by Garnier H and Al as well in Australian military [5.7.8].

Its military missions operate in a malaria-endemic zone (zone 3), which affirms a high plasma exposure, hence the need to comply with prophylactic measures, which is not the case because only 19% have good compliance with prophylactic measures (chemical and physical); In the light of the literature all authors agree on the non-compliance with prophylactic measures in malaria patients [9.10.11].

The DRC and Ivory coast are the most visited by our military, its countries are ranked by the WHO among the 19 countries generating 90% of malaria cases in Africa [12].

Most authors confirm the predominance of Plasmodium falciparum [7.13.14].

Malaria presents a public health problem due to the development of malaria resistance. The choice of chemoprophylaxis should take into account the areas visited, the intensity of transmission, living conditions, and pathological history [15].

Conclusion :

This epidemiological study of import malaria made at the 3° military hospital of Laayoune allowed for the first time in this region (Sakia Hamra) to detect and dissect the profile of our military patients and to detect failures in the follow-up of prophylaxis , this should invite us to strengthen the prophylactic means to control compliance .

Finally, it is important to maintain the momentum of prevention, control and elimination efforts observed over the past decade.

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