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Data Article

Epidemiological data of falciparum malaria in Ado-Odo/Ota, Southwest Ogun State, Nigeria

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ABSTRACT

In this data article, Blood and corresponding saliva samples from subjects presenting with fever and parasitaemia ≥ 2000 were obtained from selected hospitals in Ado-Odo/Ota, Ogun State over a period of two years and analyzed using Polymerase chain reaction-Restriction fragment Length Polymorphism (PCR/Nested PCR-RFLP) to detect genetic mutations of *Plasmodium falciparum* chloroquine resistance transporter (*Pfcr*), *Plasmodium falciparum* multidrug resistance (*Pfmdr1*) and non-synonymous Pkelch (pk13) mutated genes. The study confirmed the presence of resistance genes in the blood and saliva samples collected from the study site.

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Specification Table

| | |
|----------------------------|---|
| Subject area | Microbiology |
| More specific subject area | Epidemiology of malaria |
| Type of data | Tables and graph |
| How data was acquired | Sample collection, Microscopy, PCR analysis |
| Data format | Raw, analyzed |

Abbreviations: PCR, Polymerase chain reaction; RFLP, Restriction fragment length polymorphism

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| | |
|--------------------------|--|
| Experimental factors | DNA extraction from blood and saliva samples of subjects presenting with fever and parasitaemia of ≥ 2000 parasites/ul of blood in selected health facilities. |
| Experimental features | PCR was used to detect of <i>Plasmodium falciparum</i> parasites and resistance genes. |
| Data source location | Medical diagnostics laboratory Covenant University Medical center and Molecular Research laboratory, Covenant University, Ota, Nigeria. |
| Data accessibility | Within this research |
| Related research article | Olasehinde GI, Ojorongbe OO, Fagade EO, Ruchi S, Egwari LO, Ajayi AA, Adeyeba OA. Detection of Molecular Markers of Antimalarial Drug Resistance in Plasmodium Falciparum from South-Western Nigeria. <i>Covenant Journal of Physical and Life Sciences</i> ; 2014 1(2): 61- 75. |

Value of the data

- The data provides an epidemiology on falciparum malaria and resistance genes in the study site.
 - The data set provides researchers with a platform for enhanced studies in the production of non-invasive malaria test kit using saliva.
 - The data establishes the need for improvement of existing drugs/ development of new ones.
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1. Data

This data article presented and analyzed incidence and prevalence of *Plasmodium falciparum* and resistance genes (*Pfcr*, *Pfmdr1* and *Pk13*) in ADO-Odo/Ota, Ogun State. It also examined the prospective of saliva to serve as a non-invasive diagnostic method for malaria diagnosis [1]. This data will encourage pragmatic monitoring and surveillance of falciparum malaria in the research area as recommended by the WHO's recommendation [2]. It also provides researchers with a platform for enhanced studies in the production of non-invasive malaria test kit using saliva.

2. Experimental design, materials and methods

Samples of blood and corresponding saliva from subjects were collected from various hospitals in Ado-Odo Local government area of Ogun State for three years. The study group for the research cut across sexes of different age groups of patients presenting with fever and parasitaemia of ≥ 2000 parasites/ul of blood. Ethical approval for this study was obtained from the Covenant University Biological Sciences Ethical Review Committee (CUBIOSCREC). Informed consent was obtained from all participants. Where participant was a minor, consent was obtained from participant's guardian. Parasite identification and infective stage was determined using microscopy study. For molecular studies, Parasite DNA from blood and saliva was extracted using a genomic DNA extraction kit. Nested PCR-RFLP using the specific primers - *Pfcr*, *Pfmdr1* and *Pk13* gene was carried out [3–5]. Amplicons were sequenced directly by using each primer for target gene amplification. Data were analysed and presented as follows; Table 1 shows the incidence of *P. falciparum* infection in Ado-Odo/Ota Local government area of Ogun State, Nigeria in the year 2015. Table 2 shows the incidence of falciparum malaria in the year 2016. Table 3 shows the incidence of falciparum malaria in the year 2017. Table 4 shows the prevalence of falciparum malaria within two years. Table 5 shows the prevalence of resistance genes. Fig. 1 presents the incidence of *P. falciparum* malaria infection in males and females. Fig. 2 presents the resistance genes detected in blood and saliva samples. Fig. 3 presents *Pfcr* gene detected in blood and exact number of corresponding saliva samples.

Table 1
Incidence of falciparum malaria in Ado-Odo/Ota, Ogun State (2015).

| AGE | Number of samples collected | | | Number of positive cases | | | |
|-------|-----------------------------|--------|-------|--------------------------|--------|-------|-------------|
| | Male | Female | Total | Male | Female | Total | % Incidence |
| ≤ 5 | 43 | 56 | 99 | 24 | 20 | 44 | 44.44 |
| 10–20 | 233 | 276 | 509 | 144 | 114 | 258 | 50.69 |
| ≥ 20 | 126 | 132 | 258 | 47 | 33 | 80 | 31.01 |
| Total | 402 | 464 | 866 | 215 | 167 | 382 | 44.11 |

Table 2
Incidence of falciparum malaria in Ado-Odo/Ota, Ogun State (2016).

| Age | Number of samples collected | | | Number of positive cases | | | |
|-------|-----------------------------|--------|-------|--------------------------|--------|-------|-------------|
| | Male | Female | Total | Male | Female | Total | % Incidence |
| ≤ 5 | 8 | 15 | 23 | 5 | 8 | 13 | 56.52 |
| 10–20 | 39 | 35 | 74 | 31 | 21 | 52 | 70.27 |
| ≥ 20 | 38 | 30 | 68 | 14 | 23 | 37 | 54.41 |
| Total | 85 | 80 | 165 | 50 | 52 | 102 | 61.82 |

Table 3
Incidence of falciparum malaria in Ado-Odo/Ota, Ogun State (2017).

| Age | Number of samples collected | | | Number of positive cases | | | |
|-------|-----------------------------|--------|-------|--------------------------|--------|-------|-------------|
| | Male | Female | Total | Male | Female | Total | % Incidence |
| ≤ 5 | 17 | 9 | 26 | 7 | 5 | 12 | 46.15 |
| 10–20 | 41 | 47 | 88 | 12 | 18 | 30 | 34.09 |
| ≥ 20 | 27 | 41 | 68 | 8 | 12 | 20 | 29.41 |
| Total | 85 | 97 | 182 | 27 | 35 | 62 | 34.07 |

Table 4
Prevalence of falciparum malaria in Ado-Odo/Ota, Ogun State (2015–2017).

| Age group | Number of samples collected | | | Number of positive cases | | | |
|-----------|-----------------------------|--------|-------|--------------------------|--------|-------|---------|
| | Male | Female | Total | Male | Female | Total | % Total |
| ≤ 5 | 68 | 80 | 148 | 36 | 33 | 69 | 46.62 |
| 10–20 | 313 | 358 | 671 | 187 | 153 | 340 | 50.67 |
| ≥ 20 | 191 | 203 | 394 | 69 | 68 | 137 | 34.77 |
| Total | 572 | 641 | 1213 | 292 | 254 | 546 | 45.01 |

Table 5
Prevalence of resistance genes in Ado-Odo/Ota, Ogun State.

| GENES | No of samples | | Positive samples | | Incidence (%) | |
|--------------|---------------|--------|------------------|--------|---------------|--------|
| | Blood | Saliva | Blood | Saliva | Blood | Saliva |
| <i>Pfcr1</i> | 71 | 35 | 34 | 11 | 47.89 | 31.43 |
| <i>Pfmdr</i> | 46 | 30 | 16 | 8 | 34.78 | 26.67 |
| <i>PfK13</i> | 87 | 18 | 19 | 8 | 21.84 | 44.44 |
| Total | 204 | 83 | 69 | 27 | 33.82 | 32.53 |

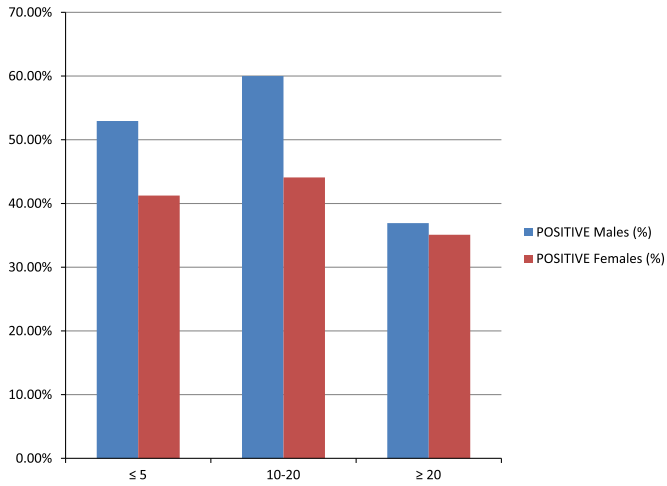


Fig. 1. Incidence of *P. falciparum* malaria infection in males against females.

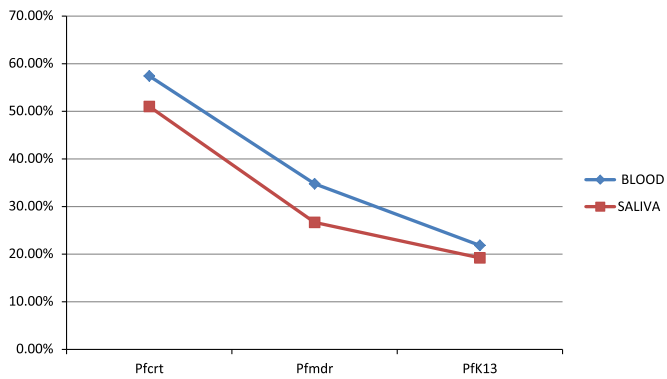


Fig. 2. Resistance genes detected in blood and saliva samples.

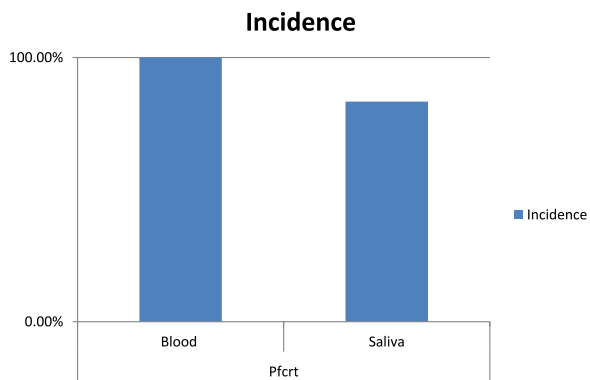


Fig. 3. *Pfprt* gene in blood and corresponding saliva samples.

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Transparency document. Supporting information

Transparency data associated with this article can be found in the online version at <https://doi.org/10.1016/j.dib.2018.06.002>.

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