VIRAL DYNAMICS AND FACTORS FAVOURING THE DURATION OF COVID-19 POSITIVITY IN CAMEROON

284

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BACKGROUND

- Coronavirus disease (COVID-19), has rapidly spread worldwide since its emergence.
- Evolution evidence of Coronavirus disease 2019 and viral clearance time remains limited in tropical settings. Understanding this is crucial for public health control measures at community-level.
- We evaluated the viral dynamics of SARS-CoV-2 infection and factors associated with positivity duration in COVID-19 cases in Cameroon

METHODS

- Prospective cohort-study
- People diagnosed positive to SARS-CoV-2 at the Chantal Biya International Reference Center (CIRCB).
- Between March 2020 and October 2021.
- Real time PCR was carried out on Nasopharyngeal samples using one of two platforms; Abbott m2000sp or DA aN Gene. Viral CN/Ct values were assessed from the first to last positive test.
- Data was entered on excel spread sheets and analyzed using Epi-info version 7.0. Quantitative variables were described with means ± SD or Median [IQR] where appropriate. P was <0.05 was considered statistically significant.

RESULTS

1. Sociodemographic Data:

- We had 175(62.1%) males and 107(37.9%) females, ratio of 1.64 **.(Table 1)**
- Ages ranged from 6 to 80 years with an overall mean age ±SD of 41 ± 14 years.**(Table 1)**

2. Distribution according to symptoms

- Most participants were asymptomatic 84.4% (238/282).
- The predominant presenting symptom was cough 59.09% (26/44).

3. Baseline Viral load according to age and gender :

The mean viral load was 24.77 Ct with similar distribution between males (24.42±7.2 Ct) and females (25.47±6.9 Ct), p=0.3. **(Table 2)**

4. SARS-CoV-2 median positivity duration trend:

It increased from the first wave to the second wave (15-17days) and decreased from the second to the third wave (17-8 days). **Figure 1**

CONCLUSIONS

- SARS-CoV-2 positivity duration is about 15 days,
- Men and/or the elderly stand at higher risk of prolonged infection,
- The viral decay (0.3 Ct daily) suggests specific confinement period,
- The variability of the positivity duration of SARS-CoV-2 across the waves suggests continuous surveillance for updated prevention and control strategy. Natural immunity should be taken into consideration for public health policy.

ADDITIONAL KEY INFORMATION

LIMITATIONS

❖This study was carried out just in one part of the country, so it cannot be generalised nationwide.

❖The findings are limited to the first three waves and further studies should be conducted in subsequent waves driven by the omicron variants.

Acknowledgements

Table 1: **Sociodemographic distribution**

Variables	N (%)	Wave 1 (N=47)	Wave 2 (N=193)	Wave 3 (N=42)	
GENDER					
Male	175 (62.1)	27 (67.5%)	131(67.9%)	17(40.8%)	P=0.003
Female	107 (37.9)	20(32.5%)	62(32.1%)	25(59.5%)	
AGE					
[0-19]	22 (7.9)	1 (3.7%)	15 (68.2%)	6 (27.3%)	P=0.002
]19-35]	83 (29.7)	25 (30.1%)	43 (51.8%)	15 (18.1%)	
]35-45]	71 (25.4)	10 (14.1%)	51 (71.8%)	10 (14.1%)	
≥46	103 (36.9)	10 (9.7%)	84 (81.6%)	9 (8.7%)	
SYMPTOMATOLOGY					
Symptomatic	44 (15.6%)	15 (34.0%)	22 (50.0%)	5 (11.3%)	P<0.00001
Asymptomatic	238 (84.4%)	23 (9.7%)	171 (71.8%)	38 (15.9%)	

Table 2: Baseline viral load according to gender and age

	Viral load (Ct-value)			
	≤20	21-30	31-36	Total
Gender				
Female	17 (23.9%)	29 (40.8%)	25 (35.2%)	71
Male	30 (21.3%)	73 (51.8%)	38 (27.0%)	141
Age				
[0-19]	4 (26.7%)	8 (53.3%)	3 (20.0%)	15
]19-35]	15 (25.9%)	25 (43.1%)	18 (31.0%)	58
]35-45]	9 (18.0%)	24 (48.0%)	17 (34.0%)	50
≥46	19 (22.1%)	46 (53.5%)	21 (24.4%)	86

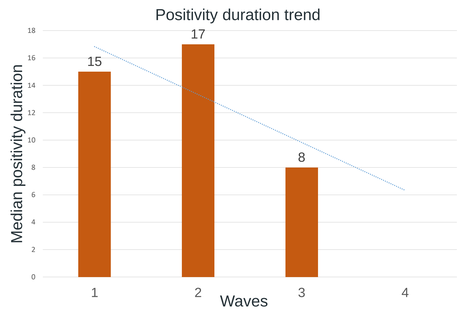


Figure 1: Positivity duration trend