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Implication of biochemical markers in the disease severity in malaria and covid-19 co-infected patients in Yaoundé, Cameroon

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BACKGOUND

Malaria and COVID-19 are two major public health concerns worldwide, and their co-infection is a growing concern, particularly in tropical regions like Cameroon. The dual infection can exacerbate the severity of both diseases, leading to increased morbidity and mortality. Biochemical markers, such as liver enzymes and kidney function biomarkers, can play a crucial role in predicting disease severity and outcomes.

Research Objective

To investigate the relationship between biological markers in Malaria and Covid-19 co-infections and their predictive value for disease identification, stratification, severity, and outcome in a Cameroonian population, with a focus on identifying the most informative markers for clinical decision-making.

METHODS

Study site

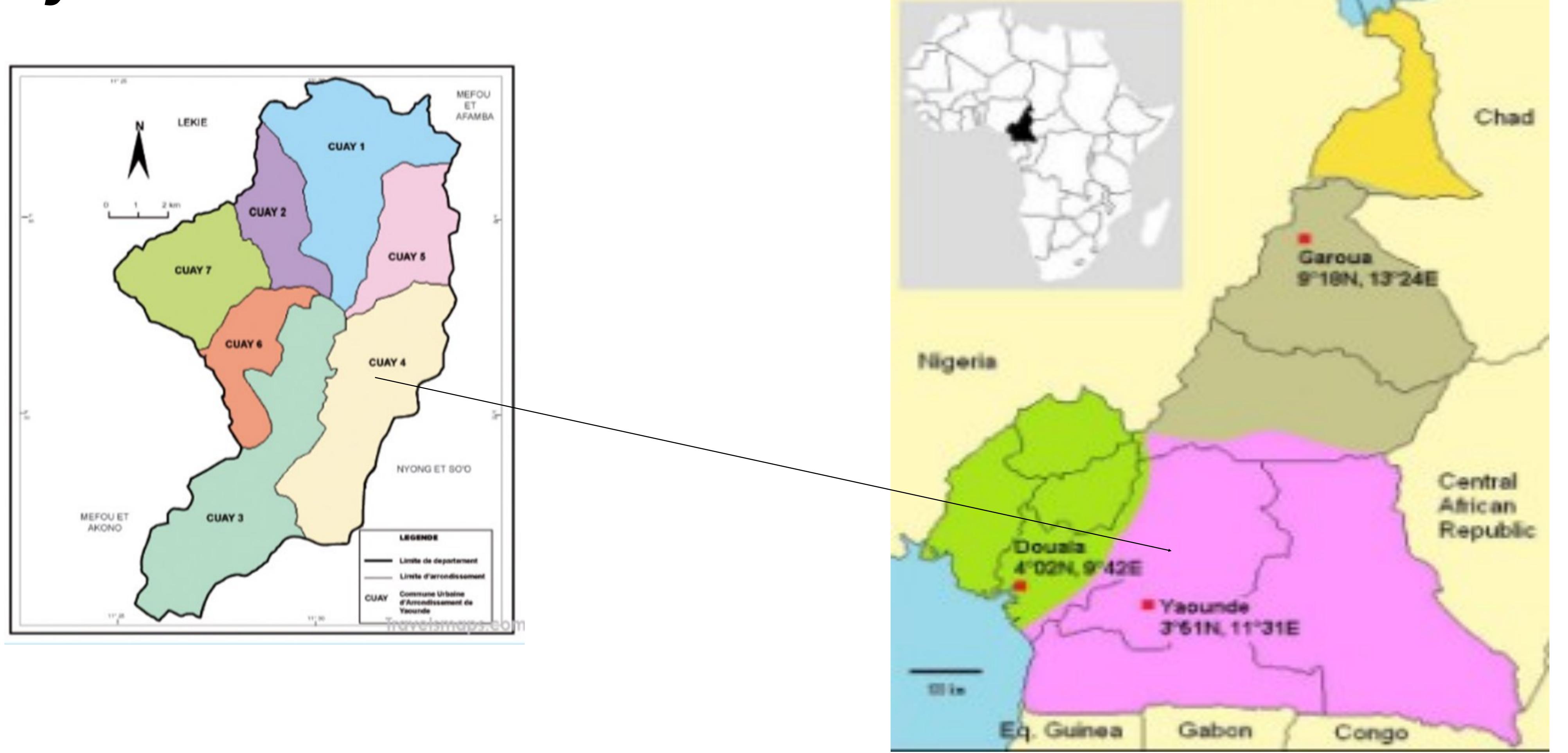


Figure 1. Geographical location of the study site

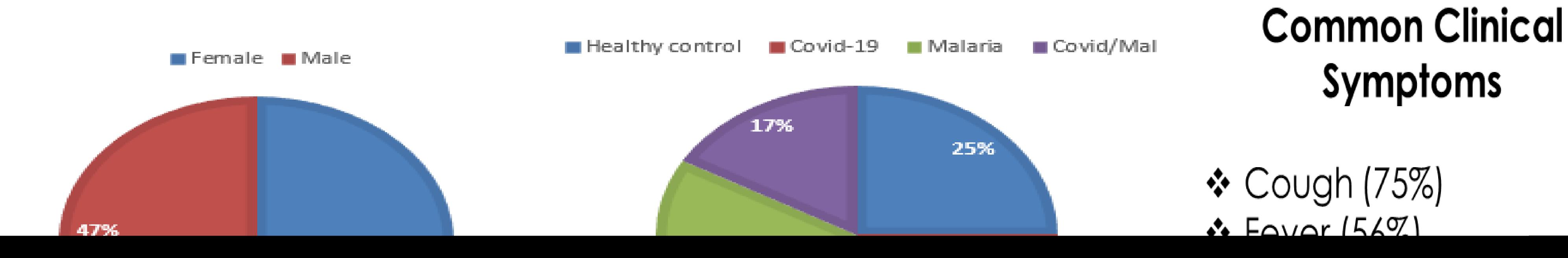
Study design

- ⇒Cross sectional study was conducted in a total of 96 participants (45 females) aged between 15 to 64 years retained as convenient sample selected from 320 participants recruited during the CCP project in 2023.
- ⇒ Malaria diagnosis: Rapid Diagnostic test, Microscopy and RT-PCR using whole blood
- ⇒ Covid-19 diagnosis: Rapid diagnostic test and RT-PCR for confirmation using Nasopharyngeal swabs Ethics

Data analysis

RESULTS

I. Demographic characteristics of study population



II. Biochemical Analysis

*: P<0.05; **: P< 0.01, ***: P<0.001, ***: P<0.001.

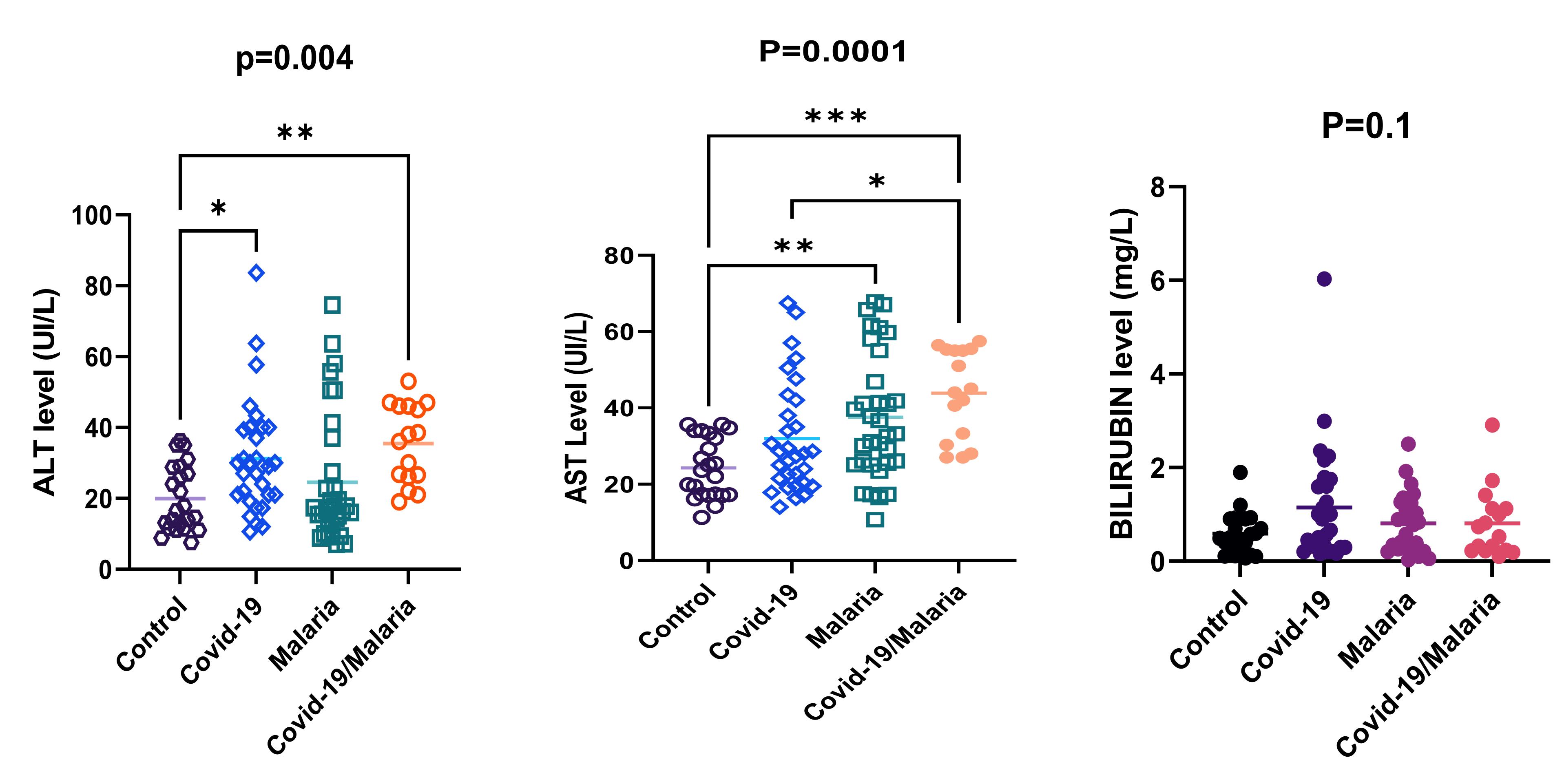


Figure 4. Liver function markers

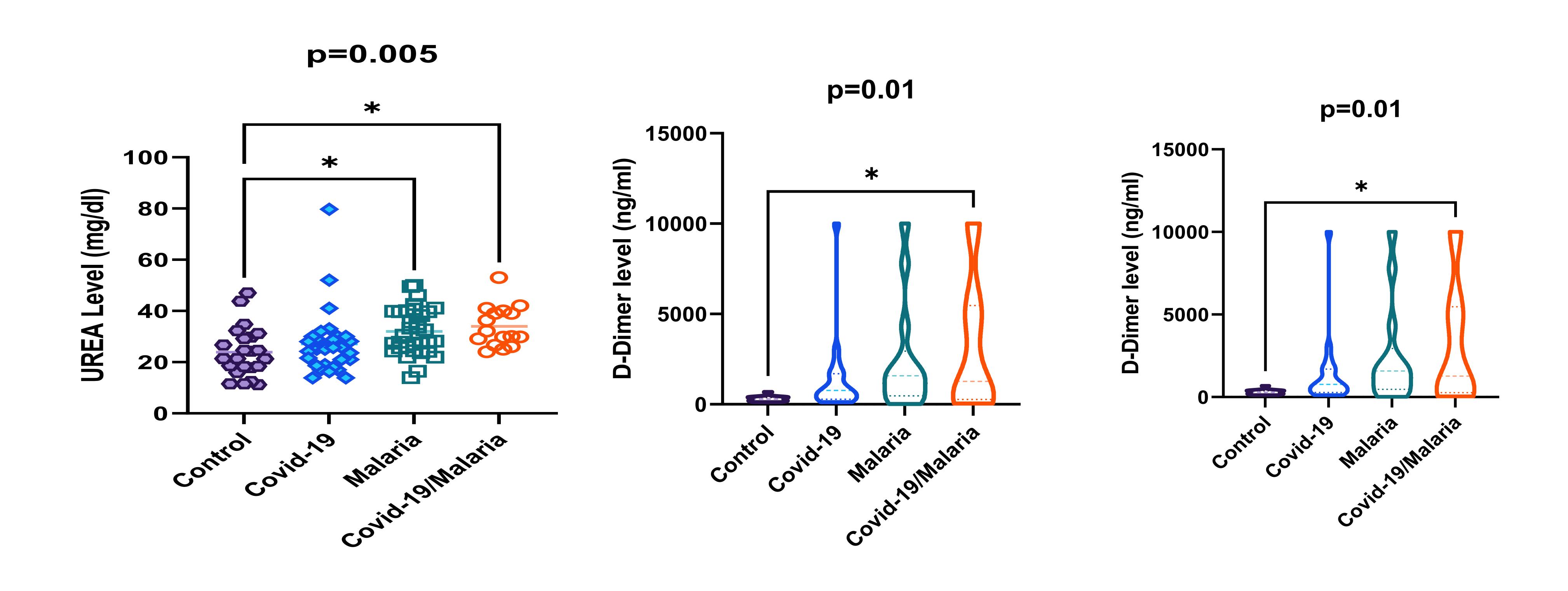
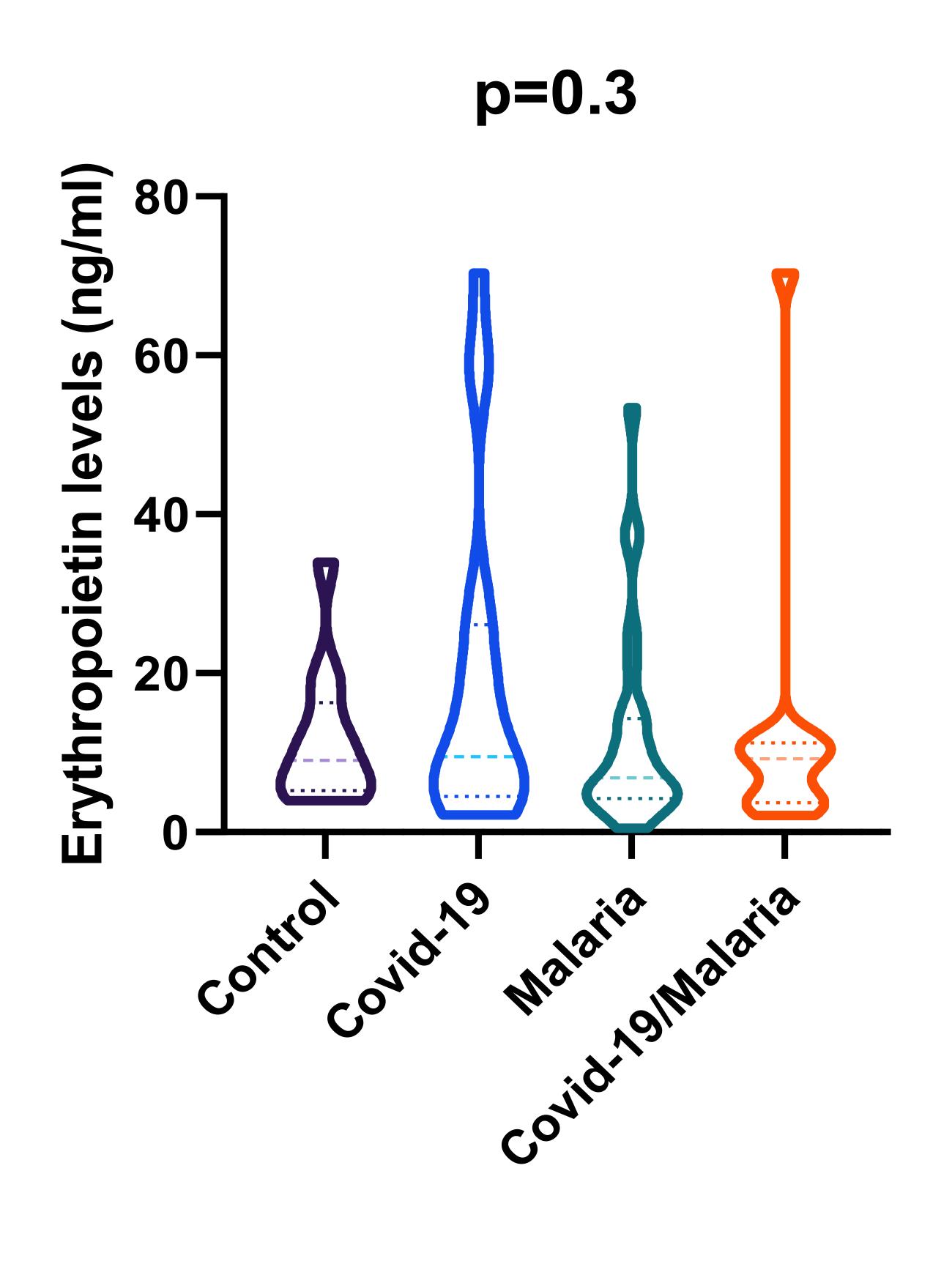


Figure 6. Kidney function markers



		Corre	elation wit	h:	
Parameter	AST	ALT	Creatinin Bilirubin		Erythropoietin
D-dimer	-0.194	0.056	0.300	-0.147	-0.238
Concen.	P = 0.526	P = 0.855	P=0.319	P = .632	P = .433
AST		-0.210	0.350	-0.304	0.352
		P=0.435	P = .0184	P = .253	P = .238
ALT			0.313	0.333	-0.057
			P = .238	P = .208	P = .854
Creatinin				0.125	0.273
				P = 0.646	P = 0.366
Total Bili-					-0.060
rubin					P = 0.846
Erythro-					
poietin					
Concen.					

Conclusion

in the context of Covid-19 disease, malaria parasites can have additive effect in the liver and kidney markers. These highlight the importance of considering co-infection in the diagnosis and management of patients presenting with COVID-19 and malaria. Further research is needed to better understand the mecha-