



Regulatory T-cells in sympatric ethnic groups with different susceptibility to malaria in Burkina Faso

Guillaume S. Sanou^{1,3}, W. Regis Tiendrebéogo^{2,3}, André Lin Ouédraogo³, Amidou Diarra³, Alphonse Ouédraogo³, Charlotte Behr⁴, Marita Troye-Blomberg⁵, David Modiano⁶, Amagana Dolo⁷, Maria G. Torcia⁸, B. Sodiomon Sirima³, Issa O. Nébié³

¹Polytech University Of Bobo/, ²University Of Ouagadougou ³Centre National de Recherche et de Formation sur le Paludisme, Burkina Faso, ⁴Unité CNRS 5164 IFR66- Pathologies Infectieuses et Cancer, Bordeaux2 (France), Bordeaux, France, ⁵Department of Immunology, Wenner-Gren Institute, Stockholm University, Sweden, Stockholm, Sweden, ⁶Department of Public Health Sciences, University La Sapienza, Rome (Italy), Rome, Italy, ⁷Malaria Research and Training Centre, University of Mali, Bamako, Mali ⁸Department of Clinical Physiopathology, Center of Excellence DENOTHE, University of Firenze (Italy), Firenze, Italy

This study is supported by EDCTP senior fellowship grant CG_ta_05_40200_008 and MIM/TDR project ID. A60042 and



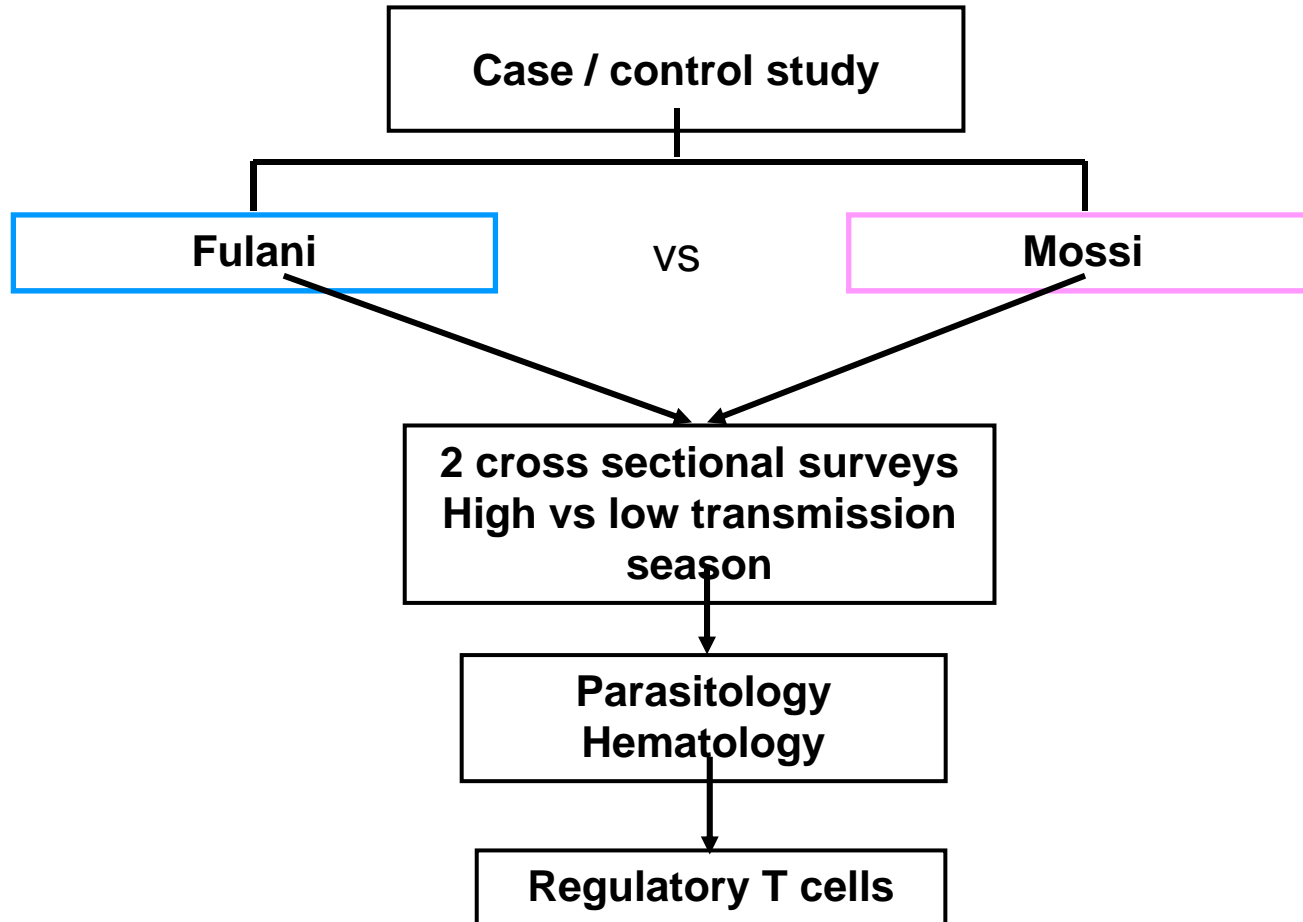
Objective



To assess the role of T-reg in protecting from malaria in population with different susceptibility to malaria in Burkina Faso



Methods (1)





Methods (2)



- Absolute number cells count
- Parasitological diagnosis
- Hb phenotyping, G6PD deficiency
- Immunological phenotyping:
 - Surface staining : CD3, CD4, CD25 and CD127
 - Intracellular staining: FoxP3 and IL10



Results (1)

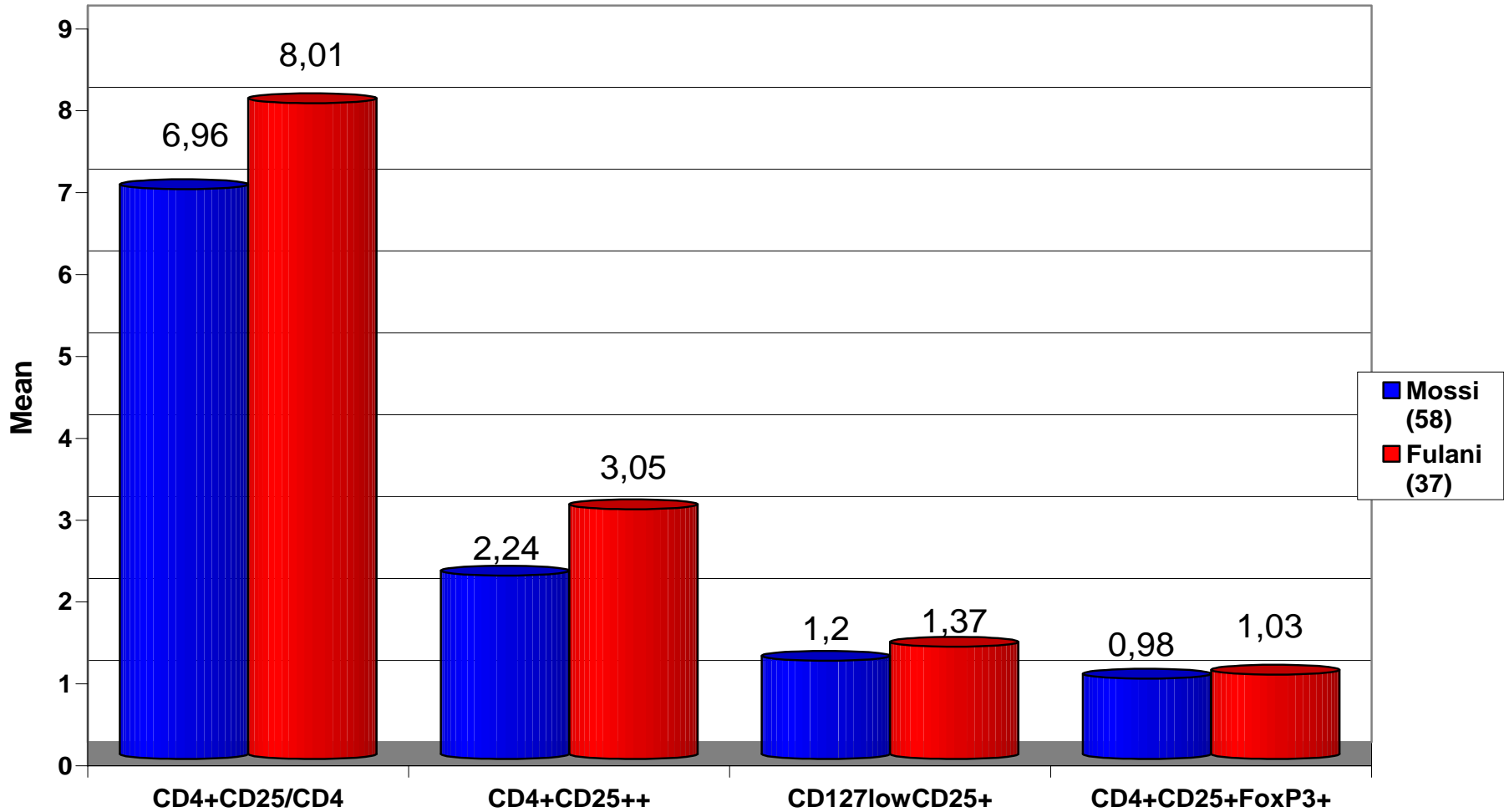


| | Fulani | | Mossi | |
|---|--------|------|-------|------|
| | High | Low | High | Low |
| Male/Female | 0.78 | 0.85 | 0.94 | 0.94 |
| Mean age in years | 33.0 | 33.9 | 33.3 | 34.9 |
| Prevalence of <i>P. falciparum</i> infection | 8.8 | 0 | 27.1 | 12.2 |
| Positive Parasite density | 168 | | 297 | |



Results (2)

Fulani-Mossi: Treg Profile

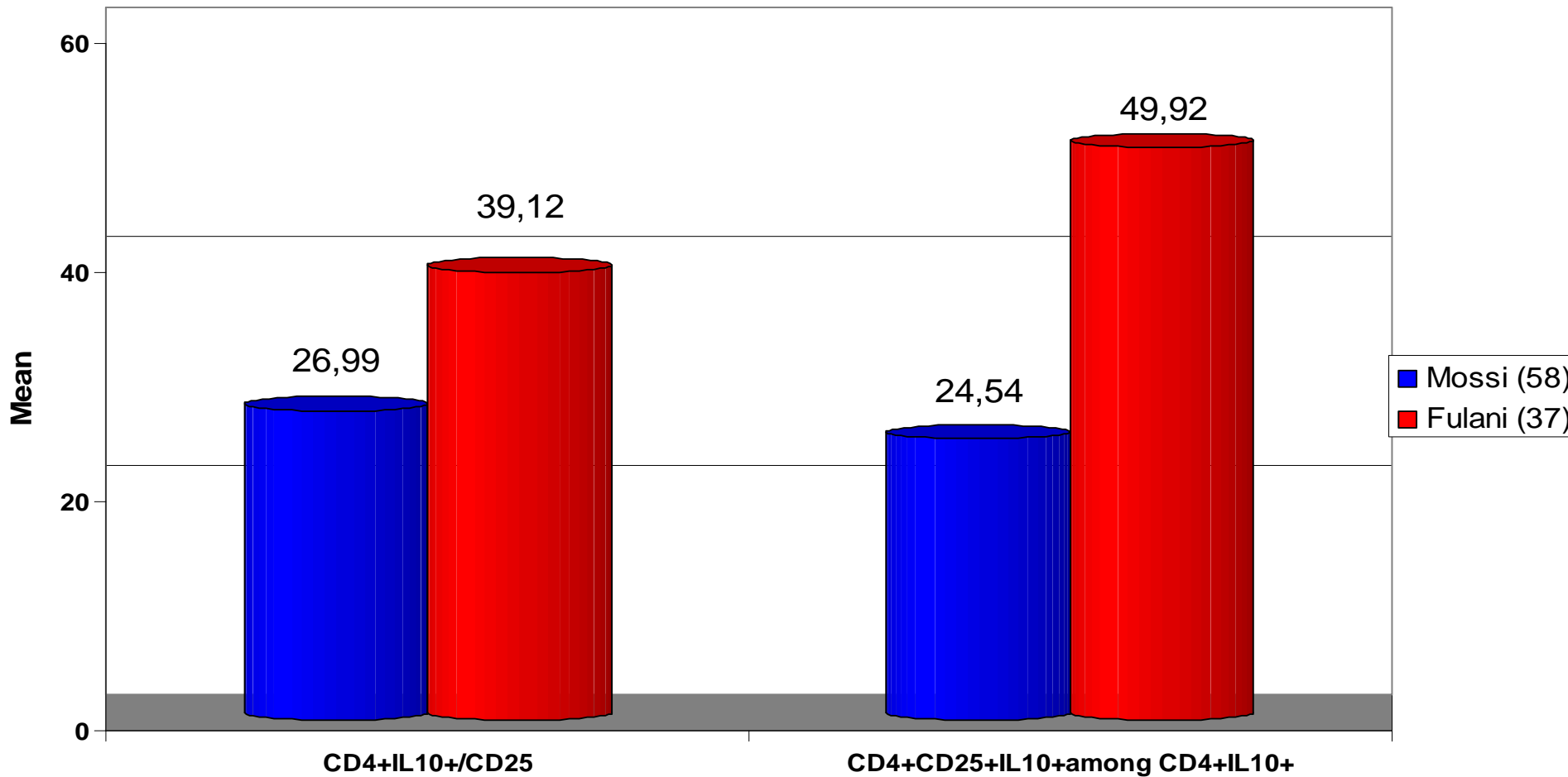




Results (3)



Fulani-Mossi:IL10 Production





Discussion & Conclusions



- The proportion of CD4+CD25^{high} was high in Fulani compare to Mossi. This may be explained by the high load of parasites reported in Mossi group which might be due to the sequestration of CD4+ subpopulation in this group.
- Similarly CD4+CD25+ producing IL10 shown also to hinder parasite control and to limit disease severity were reported to be high in the Fulani group.
- May be IL10 secretion precede and contribute to Treg expansion



Future perspectives



- Assessment of malaria specific responses to T-regs using malaria peptides and crude schizonts extracts
- Assessment of malaria specific responses to T-regs in pregnant women
- Further investigations in Fc Receptors polymorphism