Use of Sysmex XE-2100 and XE-5000 hematology analyzers for the diagnosis of malaria in a nonendemic country (France).

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Résumé en anglais	**INTRODUCTION:** Most studies dealing with automated hematology analyzers (HAs) and malaria diagnosis are conducted in endemic countries. **METHODS:** We retrospectively studied cell blood counts (CBCs) performed with Sysmex XE-2100 and XE-5000 HAs in our center (Angers, France) regarding 67 patients returning from endemic areas and infected with various Plasmodium species. **RESULTS:** In 83% of infected samples with Plasmodium vivax (Pv), ovale (Po), or malariae (Pm), extra clouds of dots were present in neutrophil and/or eosinophil area(s) on routine differential (DIFF) scattergrams. In contrast, samples infected with Plasmodium falciparum (Pf) failed to show such DIFF scattergrams, or any other suggesting malaria infection (0/ 49 pts). Abnormal areas from DIFF scattergrams were related to the presence of mature schizonts and gametocytes, undestroyed by lysis agent, the latter not observed in Pf-infected patients from our series. The internal parameter WBC[DIFF] - WBC[BASO] raised in parallel to parasitemia in Pv, Po, and Pm samples but could not be used as a surrogate for parasitemia. In Pf infection, reticulocyte/ immature reticulocyte fraction (IRF) ratio showed a significant correlation with parasitemia ($P < 0.05$). A diagnostic model developed for Pf in endemic countries showed sensitivity of 77%. **CONCLUSION:** Using SYSMEX analyzers, Pv, Po, and Pm infections are easy to ascertain as DIFF scattergrams are almost specific (specificity = 99.9%). Pf infection diagnosis by CBC may be a more promising tool.
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[1] http://okina.univ-angers.fr/publications?f[author]=19782
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[3] http://okina.univ-angers.fr/publications?f[author]=5632
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[33] http://okina.univ-angers.fr/publications?f[keyword]=6036
[34] http://okina.univ-angers.fr/publications/ua11171
[35] http://dx.doi.org/10.1111/ijlh.12145
[36] http://www.ncbi.nlm.nih.gov/pubmed/24034163?dopt=Abstract