

Immuno-hematological profile of individuals with podoconiosis in Yilmana Densa Woreda, West Gojjam, EthiopiaAytenew Atnaf^{1,2}, Aster Tsegaye², Kassu Desta² and Bineyam Taye^{2,3}¹Debre Markos University, Ethiopia²Addis Ababa University, Ethiopia³Colgate University, USA

Introduction & Aim: Podoconiosis non-filarial elephantiasis is suggested as an inflammatory disease caused by prolonged contact with irritant soil. The aim of the study is to assess the immuno-hematological profiles of individuals with Podoconiosis (Podo) in Yilmana Densa Woreda, West Gojjam.

Method: A case control study was conducted from August 29, 2017 to June 15, 2018 among 120 adults (53 Podo cases and 67 controls). Data related to socio-demographic variables and associated factors for podo were collected. Stool and blood samples were analyzed for parasite identification, hematological parameters and cytokines level measurement. Data were entered and analyzed using SPSS 20. Independent sample t-test, Chi-square, Man Whitney U test and logistic regression were applied for statistical testing.

Results: Podoconiosis had significant association with age, length of years of survival in the kebele and educational status ($P < 0.05$). Less than half (45.3%) of the cases and 82.1% of the controls were wearing shoes during interview ($p < 0.01$). Age at first leg swelling (22.6 years) was less than at first shoe wearing (27.1 years). Cases had lower mean white blood cells, granulocytes, red Blood Cells Hemoglobin (HGB), Mean Cell Hemoglobin (MCH) and Mean Cell Hemoglobin Concentration (MCHC) but higher mean lymphocyte and Mixed Cell Counts (MID) than controls ($p < 0.01$). The mean CD4 count and percent, level of cytokines; interleukins (IL-4, IL-6, IL-10, IL-17) and interferon (IFN-) of cases were not significantly different from controls ($p > 0.05$). Intestinal parasitosis was detected in 37.74% of the cases and 32.84 % of the controls ($p = 0.576$). Hookworm was the most prevalent intestinal parasite in both groups.

Conclusion: Remarkable increase in MID and lymphocyte counts (%) but decrease in granulocyte counts (%), HGB, MCH and MCHC were seen in podo cases. Appropriate interventions are needed to prevent multiple burdens in podo patients and intestinal parasites in controls.

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