RESEARCH NOTE

Detection of Anti-Schistosoma Antibodies in Oral Fluids

Maria Mônica de Aguiar Garcia, Márcia Nogueira Amorim, Luciana de Gouvêa Viana, Teresa Cristina de Melo Garcia, Naftale Katz, Ana Lúcia Teles Rabello

Laboratório de Esquistossomose, Centro de Pesquisas René Rachou-FIOCRUZ, Av. Augusto de Lima 1715, 30190-002 Belo Horizonte, MG, Brasil

Key words: Schistosoma mansoni - oral fluids - antibodies


In this preliminary study, saliva and oral transudate from 14 patients with chronic schistosomiasis and 6 negative individuals were simultaneously tested for the presence of IgG and IgA antibodies against soluble S. mansoni egg antigen (SEA) by ELISA (MN Lunde et al. 1979 Am J Trop Med Hyg 28: 87-91). Serum from these groups was tested for the presence of IgG antibodies against SEA by ELISA.

Eggs of S. mansoni in feces were detected by Kato/Katz method with one stool examination (N Katz et al. 1972 Rev Inst Med Trop S Paulo 14: 297-340). Fourteen patients (age range 13-19 years, geometric mean number of S. mansoni eggs = 488.14, range 12-2232) were studied. Six individuals (age range 27-62 years) who have never lived in an endemic area and who had had three negative stool examination, formed the control group.

Saliva from both groups was obtained with SDS Omni-Sal®, Saliva Diagnostics Systems, Vancouver, WA, USA. The fluid content of the pad is expelled by using a separator. The supernatant, which represents a 1:2 dilution, is then used directly for testing.

For the collection of the oral transudate from both groups, the collect device Ora Sure®, Epitope Inc., Beaverton, OR, USA was used. The fluid content of the pad is expelled by refrigerated centrifugation and tested without further dilution.

Blood samples were taken by venipuncture. The serum, saliva and oral transudate obtained were stored at -20°C until use.

ELISA - Polystyrene plates (Nunc Immunoplate Maxshorp® - Nunc Denmark) were coated with SEA and blocked according to ALT Rabello et al. (1992 Mem Inst Oswaldo Cruz 87: 187-190). Sera were tested at 1:100 dilution and reaction was considered positive when the optical density was higher than the mean plus two standard deviations of six negative control sera.

Presence of IgG and IgA antibodies to SEA in saliva and oral transudate were tested. Reaction was considered positive when the optical density was higher than the mean plus two standard deviations of six negative control saliva or oral transudate.

For statistic analysis the SAS software and guides (SAS version 6, SAS Institute Inc., North Carolina, USA) were used. All variables were individually tested by the test of normality (SS Shapiro, MB Wilk 1965 Biometrika 52: 591-611). The coefficient of correlation of Pearson was used.

Sensitivity obtained for IgG detection using saliva, oral transudate and serum was 100%. For IgA detection, sensitivity was 28.6 and 42.0%, in saliva and oral transudate, respectively. Specificity was 100% for IgG and IgA detection using all specimens.

The coefficient of correlation of Pearson of specific anti-S. mansoni antibodies IgG between serum and oral transudate was r = 0.73 (p = 0.0002) and between serum and saliva was r = 0.44 (p = 0.05).

Demonstration of anti-S. mansoni antibodies in saliva and oral transudate seems to be a promising test for diagnosis of S. mansoni infection. A comprehensive investigation of a larger number of positive and negative endidual patients is in progress.

Acknowledgements: to SDS Omni-Sal®, Saliva Diagnostics Systems, Ora Sure®, Epitope for the collection devices and Dr Andrew Simpson for critical review of the manuscript.

This study is partially supported by RHA-E-PBIC CNpq

*Corresponding author

Received 13 December 1994
Accepted 20 February 1995