RESEARCH NOTE

Detection of Anti-*Schistosoma* Antibodies in Oral Fluids

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The use of saliva and oral transudate samples has been suggested as a non-invasive alternative for detection of antibodies to a variety of viral agents including hepatitis A, B and C virus, rubella virus, HIV antigens (JV Parry et al. 1987 *Lancet 2*: 72-75, T Thieme et al. 1992 *J Clin Microbiol 30*: 1076-1079, H Tamashiro, NT Constantine 1994 *Bull WHO 72*: 135-143).

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 venopuncture. 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 Caroline, USA) were used. All variables were individually tested by the W 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.

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