

PREVENTION OF PERINATAL TRANSMISSION OF HEPATITIS B VIRUS
CARRIER-STATE BY HEPATITIS B VACCINE AND HEPATITIS B
IMMUNOGLOBULIN

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It is estimated that in the world there are about 200 million persistent carriers of the Hepatitis B virus (HBV). These carriers are at an increased risk of developing chronic liver disease and/or hepatocellular carcinoma. Especially in the Far East where 5-20% of the population are HBsAg carriers, 20-40% of these have acquired the HBV-infection in the perinatal period. Newborn infants of HBsAg carrier mothers in South East Asia run a risk for 70-90% to acquire the persistent HBsAg carrier-state by perinatal HBV-infection. In Africa on the contrary only a minor proportion of HBV infections are related to perinatal transmission. Intervention studies with Hepatitis B Immunoglobulin (HBIG) in Taiwan showed that 20 IU HBIG given within the first 7 days of life to newborn infants of HBsAg carrier mothers did not prevent the persistent HBsAg carrier-state in these children. (Beasley et al., In: Viral Hepatitis. Phil. Frank. Inst. Press., 1978, 333-345). However 100-200 IU HBIG given within 48 hrs after birth, followed by multiple HBIG injections in the first 6 months of life was highly successful. (Reesink et al., Lancet 1979, ii, 436-438 and Beasley et al., Lancet 1981, ii, 388-391). With the introduction of plasma derived Hepatitis B (HB) vaccines investigators asked themselves if HB-vaccine given alone or in conjunction with HBIG in the perinatal period could provide an even better protection or might induce tolerance to HBV antigens, thus increasing the susceptibility for the development of the carrier-state in these infants. Now these questions are answered. One study in Taiwan (Beasley et al., Lancet 1983, ii, 1009-1012) and one placebo controlled trial in Hong Kong (Wong et al., Lancet 1984, i, 921-926), compared different immunization schedules with HB-vaccine alone or in conjunction with a single or multiple injections HBIG in newborns of HBsAg carrier mothers: the incidence of the persistent carrier-state in these infants, being 70-90% in the control groups, was lowered dramatically from 20% in the babies treated at birth with HB-vaccine alone to 5-10% when HB-vaccination at birth was combined with a single injection of HBIG or a schedule of multiple HBIG injections. The failures in the combined HB-vaccine/HBIG treatment groups were mainly intra-uterine HBV-infections which are not influenced by vaccination. It is now recommended to start HB-vaccination, combined with a single injection of HBIG (200 IU), in all newborn infants at risk of perinatal HBV-infection, as soon as possible after birth.

IRON LOSS AND BLOOD LOSS CAUSED BY HOOKWORMS IN DOGS

B. H. Rep
A. Roll

Blood loss and iron loss were estimated in *UNCINARIA STENOCEPHALA* and *ANCYLOSTOMA CANINUM* infected dogs. The blood of eleven experimentally infected beagles was labelled with sodium-51-chromate and iron-59-citrate, to test the hypothesis that in hookworm infected dogs iron loss is exclusively related to the bloodloss caused by the hookworm-population. The ratio iron loss : chromium loss was ca. 140 % in pre-patent infections and 100 % in patent *A. CANINUM* infections. In *U. STENOCEPHALA* infections these values were ca. 130 % and 140 % respectively. The excess in iron losses can be related to our opinion to the feeding behaviour of the hookworms in the intestinal mucosa and the excretion of this eroded mucosa with the faeces. It can be concluded that hookworm pathology is related not only to bloodloss but also to the mucosal damage caused by the hookworms in the intestine.

CLINICAL ASPECTS OF IMMUNODIAGNOSIS IN SCHISTOSOMIASIS
Bernd Reuter

Diagnosis of Schistosomiasis made on the basis of different methods and clinical findings includes immunodiagnosis. In a hospital-based study in Kilimanjaro-Region/Tanzania it was intended to find out the value of serology in patients with positive serological findings but negative routine examinations for Schistosomiasis. Of 92 cases with significant titres for Schistosoma-AB in the Indirect-Immunofluorescent-Test (IFT), 62 cases showed negative results for stool-and urine-ova, including 17 cases with no evidence of Schistosomiasis in rectal-snips, liver-biopsies and cystoscopies. Age ranged from 9 to 68 years in 39 males and 23 females. Presentation of symptoms/signs: Hepatosplenomegaly (9), hepatomegaly (9), splenomegaly (6), Abdominal pain (29), diarrhoea (14), fever (10), oedema/ascites (9), itching (8), diffuse pains (7), haematuria/dysuria (6), neurological signs (5). 22 patients were treated with Niridazol (16), Stibophen (8), Fraziquantel (3) and Metrifonate (2). Leading symptoms: abdominal pain (16), diarrhoea (9), oedema / ascites (6), fever (6) and diffuse pains (5). Definite clinical improvement was observed in 24 patients (77 %), among them 1 patient with peripheral neuropathy and positive serology in the CSP. No change in 1 patient, 4 patients could not be followed-up. The failure-rate reflects the known efficacy of different Schistosomicides. 62 of 92 positive IFT-results (67 %) contributed to the diagnosis and indication for treatment in 29 patients. Conclusions 1. The IFT helps in situations where conventional findings are negative for Schistosomiasis. 2. The percentage of non-secretors of ova is higher than expected. 3. These patients are frequently seen in a referral-hospital. 4. Serology in these clinical conditions is a necessary diagnostic tool.

ADVICE TO PERSONS PLANNING TRAVEL IN THE TROPICS
Daniel Reid

With the advent of relatively cheap "package tours" travel abroad has become much easier and this has led to vast numbers of inexperienced travellers taking advantage of these opportunities. Unfortunately, because of the lack of awareness about the hazards holidaymakers face when away from home many have to endure illnesses which for the most part are preventable. For over a decade studies have been undertaken by members of the Communicable Diseases (Scotland) Unit in Glasgow to try and gain an insight into the extent of morbidity and problems of prevention of illness acquired abroad.

It is important that the traveller plans well ahead to determine in advance the potential hazards, and obtains sound advice about immunisation and other prophylactic measures (e.g. against malaria). During the journey, clothing should be appropriate, and over-indulgence in alcohol and food should be avoided. After arrival precautions against excessive sunlight and various infection risks (especially gastro-intestinal infection) should be undertaken and after return any illnesses should be reported to the medical attendant.

There is a need to improve the knowledge of the traveller of the risks associated with journeys abroad and of ways to prevent them. Health education has a particularly important role in this respect.

HISTOLOGICAL OBSERVATIONS ON THE FEEDING BEHAVIOUR OF
HOOKWORMS IN DOGS

B. H. Rep
A. van Goor

A study was made of the feeding behaviour of *ANCYLOSTOMA CEYLANICUM*, *A. CANINUM* and *UNCINARIA STENOCEPHALA* hookworms in experimentally infected dogs. Histopathological observations were made on the damage caused by hookworms in the intestinal mucosa. From these observations we got the impression that hookworms penetrate into the mucosa like a "jerked apple-corer" and feed on the mucosal stroma. *U. STENOCEPHALA* is restricted to the superficial layers, *A. CANINUM* penetrates into the basal mucosal layers and into the submucosa, *A. CEYLANICUM* takes an intermediary position between these two species. The main food substance for hookworms seems to be the light mucosal stroma. This is easily ingested during the piercing of the mucosa. Compact stroma needs more activities: ingestion by buccal secretion via the dorsal gutter and cutting off the weakened stroma by ventral plates, teeth or oral notches. Persistent hookworm secretions were observed in the mucosa and thought to be related to intravillous hemorrhages. These experimental hemorrhages were associated to hemosiderin concentrations observed by us in human hookworm infections. Frequent penetration of the mucosa by hookworms can produce villus atrophy. Especially in *UNCINARIA* infections the presence of a dense layer of mucus was observed, in which the hookworms were dug in and from which they scraped off the apical villi. In *A. CANINUM* infections hookworm penetration into the lymph glands was observed. It was concluded that hookworms primarily feed on the stroma of the mucosa and that blood loss is closely related to the feeding behaviour of hookworms, especially to their penetration of the mucosa.

EPIDEMIOLOGY AND CLINICS OF MALARIA IN VILLAGES OF THE CONGO,
FOREST

Alain Richard
Jean-François Molez, Pierre Carnevale, Jean Mouchet, Marc Lallemand and
Jean-François Trapé

A two years longitudinal research on malaria has been carried out in villages of the forest area of Mayombe in the Congo. About 1000 people were surveyed. *Anopheles gambiae* s.s. is the main vector. The inoculation rate varies, from 80 to 400 infectious bites per adult human per year. During the 3 months of dry and cool season, the transmission is reduced by 94 to 99% as compared to the rainy season.

The parasite index of *P. falciparum* is 85% among children and 70% in the adults. It is associated to *P. malariae* in 20 to 40% of the cases. The parasitic density is very high among children of 4 months to 2 years (10,000 parasites per μ l on an average) but it decreases quickly as they become older. In the adults population, 60% of the infections are under 50 parasites per μ l. Splenomegalies appear quite early. The highest splenic index is recorded among the children 2 years old (60 to 70%) and it decreases later. Such an evolution of both P.I. and S.I. shows that the immunity mechanisms restricting the development of parasites are acquired very early but reach their full efficiency only after the age of 15.

The population seems to have a high degree of tolerance towards the pathogenic effects of the parasite. Thus, infant mortality due to the malaria accesses is low and during the whole period of the survey no neuro-malaria was observed. However, such a statement must be moderated by the fact that some medical treatments have been given during this period. Malaria remains a very important cause of morbidity among that infants and children below 4 (more than 14% of the dispensaries consultations during the rainy season). Then malaria is the third cause of morbidity following respiratory and gastro-intestinal diseases. In the dry season, malaria morbidity sharply decreases. Moreover, malaria is widely responsible for the anaemia in nearly 70% of the children and infants. The hematocrits rise up in dry season when malaria pressure decreases. Preemptive treatment of febrile cases by chemotherapy seems able to suppress malaria mortality and to strongly reduce morbidity. It can easily be delivered through Primary Health Care System and is economically acceptable.

G. P. H. C.

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