

Coinfection of *Schistosoma* species with Hepatitis B or Hepatitis C Viruses

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Table 1.3.4 Studies Conducted on Subjects with Acute or Chronic Hepatitis from Hepatitis B Virus.

No.	Reference	Location (Years)	Study Design (Objective) and Study Population	Exclusion Criteria	Diagnosis of Disease	Findings on Coinfection
1	Andrade et al. 2014	Federal University, Minas Gerais, Brazil (1998-2012)	<i>Cross-sectional</i> (prevalence, severity, risk factors) <u>Subjects</u> : 406 adults with chronic HBV (HBsAg+ for > 6 months), median age 45 years, 64% male	No HCV, no other liver diseases; <i>Note</i> : HDV not tested as population came from non-endemic Brazilian area	<u>HBV</u> : HBsAg, HBeAg, HBeAb, HBV-DNA; <u>Chronic HBV</u> : HBsAg+ >6 mo; <u>Replicative HBV</u> : HBV DNA ≥ 2,000 IU/m; <u>Sch(sm)</u> : patient history, stool/rectal mucosa; <u>SPF</u> : ultrasound, liver biopsy.	Coinfection with Sch was detected in 31% of patients with chronic HBV, of which 61% had replicative CHB and 39% were inactive HBV carriers; Among the coinfecting, 70% had SPF; After controlling for alcohol consumption and HBV load, coinfecting patients had significantly more severe liver fibrosis than HBV mono infected patients (44% vs. 26%); Patients with replicative CHB and SPF had more advanced fibrosis and severe inflammation compared with patients wo/SPF (80% vs 44%).
2	Nooman et al. 1977	Assiut University Hospital and Assiut University Fever Hospital, Egypt (n.d.)	<i>Cohort</i> (comparative, risk factors, disease progression, severity) <u>Patient groups</u> : 111 patients with acute viral hepatitis and 93 patients with acute viral hepatitis w/Sch, aged 2-66 years, 64% male <i>Note</i> : Patients were all admitted to hospital for AVH; After release, followed from 6 months to up to 2 years;	n.a.	<u>HBV</u> : HBsAg; <u>Sch(Sm,Sh)</u> : stool, urine, rectal snip; <u>SHE</u> : liver biopsy	HbsAg+ occurred slightly more often among Sch- AVH patients than it did among those who were Sch+ (47% vs. 56%); Over the followup period, coinfecting patients had a greater duration of antigenaemia (mean 95 days +/- 143 days) than those with HBsAg+ alone (mean 36 days +/- 61 days), and was not affected by specific Sch treatment; Sch infection may prolong the retention of HBsAg after an acute attack.

Table 1.3.4 Studies Conducted on Subjects with Acute or Chronic Hepatitis from Hepatitis B Virus.

3	Gaffar et al. 1991	Shebin El Kom Fever Hospital, Egypt (1983-1985)	<p><i>Cohort</i> (severity, disease progression, risk factors) <u>Patients:</u> 144 acute viral hepatitis patients, predominately rural, n.o.s.;</p> <p><u>Note:</u> Patients were seen on at 3 of 4 scheduled visits over 1 year</p>	No Wilson's disease, hemolysis or cholestasis; No patients had HAV	<p><u>HBV:</u> HBsAg, HBcAg, HBsAg, HBcAg; <u>Acute HBV:</u> HBcAb wo/HBsAb; <u>Sch(Sm,Sh):</u> stool, urine, rectal snip; <u>Note:</u> Also tested for antibodies to HDV</p>	Overall, 64% had acute HBV and 62% were Sch+; Coinfection of Sch w/acute HBV+ was detected in 37% of patients, of which 25% were tri-infected with HDV; 1 year after admission to hospital, the HbsAg carrier rate was nearly 4 fold higher in those with Sch, with greater splenomegaly, more persistent and greater liver function abnormalities, more sever histological findings on liver biopsies, and higher mortality than those with acute HBV infection alone; Splenomegaly increased from 40% to 69% in coinfectd over 12 months, compared with 11% to 20% in those with HBV alone; Both male sex and coinfection were associated with the prolonged HBsAg carrier state.
4	El-Hawy et al. 1993	Al-Azhar University Hospital, Egypt (1991-1992)	<p><i>Case Series/Case Control</i> (severity, risk factors) <u>Cases:</u> 54 patients with chronic active hepatitis (CAH), aged 18-43 years, 69% male; <u>Controls:</u> 20 healthy subjects matched by age and sex (used in some analyses only); <u>Note:</u> all patients followed for 6 months</p>	n.a.	<p><u>HBV:</u> HBsAg, HBcAb, HBeAg, HBcAg; <u>Sch(Sm,Sh):</u> stool, urine, sigmoidoscopy; <u>CAH:</u> Liver biopsy;</p> <p><u>Note:</u> all patients had HBsAg in hepatocytes; This study also tested for antibodies to HDV; 28% of patients were tri-infected with HBV, HDV and Schistosomiais</p>	Serological markers among the 54 patients with CAH indicated that 67% were HBsAg+ and 28% HBsAg+ w/HDV; Coinfection with Sch was also fairly common (39%), with 32% Sch+ w/HBsAg+; Similar proportions of Sch were found among those with HBsAg+ or HBsAg+ w/HDV+ serological markers (48% vs. 47%), which was greater than that observed among controls (22%); Tri-infected patients (n=7) showed the greatest altered liver profile, with greater advanced liver disease, and had the highest mortality.