

Conclusion: This study confirms that combined treatment with praziquantel is therapy of choice with patients suffering from human echinononosis.

P1602 Fascioliasis among clinically suspected hydatid cyst patients

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Objectives: Although it is a common parasite of herbivores, human fascioliasis cases are very rarely reported in Turkey. Because of its unspecific signs and symptoms like; eosinophilia, right upper quadrant pain and hepatomegaly, *F. hepatica* is mostly underestimated and these symptoms are mostly attributed to other parasitic diseases. This study aimed to investigate the presence of fascioliasis among clinically suspected cyst hydatid cases referred to Parasitology Laboratory.

Methods: E-S ELISA, which has been developed in our laboratory and considered to be a useful technique for the diagnosis of fascioliasis, has been performed to investigate anti-*Fasciola hepatica* IgG antibodies. Sero-positive cases were further evaluated both radiologically and parasitologically. The definitive diagnosis was established following the demonstration of parasite ova in the faeces.

Results: Antibodies against fasciola were detected in 3 of 226 cases (1.3%) by ELISA. Radiological findings strongly suggested the infection and eggs of *F. hepatica* were found in the stool of two of three patients.

Conclusion: Human fascioliasis is found to be more common than estimated in our country and ELISA is found to be a useful diagnostic test for screening and epidemiological studies. Moreover, fascioliasis should be considered at the presence of eosinophilia, abdominal pain and liver lesions.

P1603 Thirty-two cases of fascioliasis in Antalya and its surroundings

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Fasciola hepatica is a trematode which especially infects sheep, goats and cattle. Humans act as an accidental host and infection is rare. We diagnosed 32 cases of human fascioliasis between 1998 and 2000 (20 acute, 4 latent and 8 chronic infection). Demographic and laboratory findings and diagnostic methods are shown in the table. (Table 1)

	Acute n:20	Latent n:4	Chronic n:8
Sex			
Male	10	1	2
Female	10	3	6
Age			
Mean	44 (18-74)	50 (23-75)	46 (13-66)
Place			
Center	11	4	5
Surroundings	4		2
Both center and surroundings	5		1
Laboratory findings			
Eosinophilia	20	1	2
Mean (mm ³)	5095 (650-14 100)	1492 (60-5000)	346 (60-528)
ALT	7		2
Acute phase reactant†	3	1	1
Diagnostic method			
Eggs in faeces	1		1
Ultrasound guided aspiration	1		1
Liver sonography	19	4	8
Abdominal tomography	19	3	2
Liver biopsy	1		1
ELISA test for parasite antibody	20	4	8

Previously only few cases has been reported from Antalya and its surroundings and we think fascioliasis is not uncommon and can easily be diagnosed by radiologic and serologic tests and all patients who has eosinophilia must be evaluated for *Fasciola hepatica*.

P1604 Seroprevalence of toxocarasis in psychiatric patients

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Infection of man with *Toxocara* spp., the common roundworm of dogs and cats, causes the clinical syndrome known as visceral larva migrans syndrome. Transmission of this clinical syndrome to human occurs by oral intake of its eggs. Migration of larvae to variety of tissues causes development of this disease. Contamination of environment with faeces of infected dogs is important factors in transmission of toxocarasis. The prevalence of this disease is higher in lifestyles involving intense interference with soil. Therefore, the toxocarasis frequency is higher in childhood period of dog keeping families and members of families involved in farming. Because of inappropriate personal hygiene and oral contamination, probably, the risk of toxocarasis increases in mentally retarded and psychiatric patients. We are

not aware of any study regarding the prevalence of toxocarasis, a parasitic zoonosis which invades nervous system, mainly in central nervous system and leads to neurological disorders in mentally retarded and psychiatric patients of Turkey. This study was performed on 140 subject involving mentally retarded, deaf and severe psychiatric patients to determine the prevalence of toxocarasis prevalence in Elazig province using *Toxocara canis* IgG/M ELISA kit (Novum diagnostica, Germany). The seropositivity among mentally retarded, deaf and psychiatric patients was 22.2%, 26.3% and 44.7, respectively, a total of 39.3% in studied population. In conclusion, the prevalence of toxocarasis is much higher in these three populations compared to prevalence in healthy population in this region in 1999.

P1605 A seasonal outbreak of human parasitation by chiggers in La Rioja (Northern Spain)

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Chiggers, also known as harvest mites, is a worldwide acari which may be free living or may parasitize plants, insects, animals, or humans. In Europe, human parasitation by chiggers produce pruritic erythematous skin lesions that may be difficult to diagnosed. So far in Spain no cases has been described. Now we communicated a seasonal out-break of pruritic erythematous skin lesions in legs in outdoor workers of the woods of La Rioja (North of Spain). At least, during the last 7 years at the end of the summer and first of autumn, outdoor workers whom developed his job in the mountains of Natural Park of Cebollera presented pruritic erythematous (maculo-papules) skin lesions in legs. Now (September 2000), we have observed inside of the skin lesions the presence of *Trombicula autumnalis* in all 11 foresters (100%) who developed his job in the cited area. None of the patients have evidence of clinical rickettsial disease. We presented illustrations of the chiggers and the skin lesions.

P1606 Aetiological, clinical and therapeutic aspects in hepatobiliary parasitoses

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Objectives: Identification of the parasite type, frequency; clinical-biological syndromes and therapeutic tactics, on 100 persons of age 14-68 years old, affected by hepatobiliary parasitoses hospitalized in our service during the period 1984-2000.

Methods: We identified the parasite [through direct parasitological examinations of biliary liquid and excrement or immunoserological tests for *Echinococcus*, *Leishmania*, *Toxoplasma* and *Entamoeba*]. The sick persons have completed biochemical and paraclinical investigations [abdominal echography or CT, hepatic biopsy].

Results: The etiological structure has been: *Gardia lamblia*-61%, *Ascaris lumbricoides*-15%, *Echinococcus granulosus*-8%, *Leishmania donovani*-7%, *Toxoplasma gondii*-5%, *Entamoeba histolitica*-2%, *Fasciola hepatica*-2%. The biochemical-clinical syndromes were: Anicteric hepatitis-25%, Icteric hepatitis-42%, cholestic hepatitis-8%, jaundice-16%, Febrile icteric syndrome-8%, Hepatic cysts-14%, Cholecystitis 58%, Cholangiocholecystitis 22%, Biliary colic 20%, Hepatolienalsyndrome-16%.

Therapeutic tactics: 88% of these sick persons were cured with antiparasitics [Metronidazole, Omidazole, Albendesole, Praziquantel, Pyrometamine-Sulfadiazine, Chloroquine, Glucantime, Dihydroemetine] and one helper; in 12% of cases surgical intervention was needed to resolve the problem [*Echinococcosis*-6 cases, Hepatic Ascariidosis-2 cases, Cholecystic Ascariidosis-2 cases, Ascariidosis of Choledocus-1 case, Glardial Biliary Colic-1 case.

Conclusions: The aetiological and clinical structure of hepatobiliary parasitoses in our country is complex. The drug treatment was successfully realized in 88% of cases.

P1607 Clearance of microfilaraemia and red blood cell glutathione peroxidase (GPX) levels in asymptomatic microfilaraemics after single dose and 14 days' treatment with diethyl carbamazine citrate (DEC)

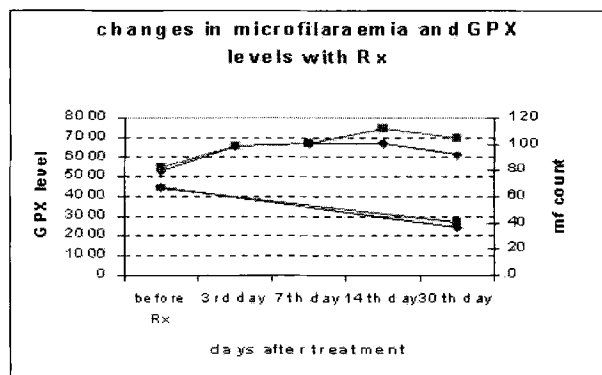
R. Premaratna, T. G. A. N. Chandrasena, W. Abeyewickreme, N. R. de Silva, L. G. Chandrasena, H. J. de Silva Ragama, CL

Background: Single dose and 14 day treatments with DEC have been found to have similar microfilaria clearance rates. Although the microfilaricidal action of DEC is not clearly understood, stimulation of platelets by the drug to release free radicals, especially those related to GPX, seem to play a role.

Aim: To study the clearance of microfilaraemia and changes in red cell GPX levels in asymptomatic microfilaraemics after single dose and 14 day treatment with DEC.

Methods: 22 asymptomatic microfilaraemics were block randomized to receive either a single dose (300 mg), [$n = 11$ (5 males), mean age 34 years (range 15–59)] or 14 days treatment (total of 4.2 g) [$n = 11$ (6 males) mean age 29.8 years (range 16–57)] with DEC. Baseline and one month post treatment microfilaraemia was assessed by Nuclepore[®] membrane filtration using 1 mL of heparinized venous blood obtained between 9 and 11 pm. Red blood cell GPX levels were analysed using spectrophotometry before and on the 3rd, 7th, 14th and 30th days after commencement of treatment using 2 mL of venous blood collected into an EDTA bottle between 8 and 9 am on each day. Assays were done within 6 h of blood collection. Blood was stored at 80°C until analysis.

Results:



A gradual and significant increase in GPX levels was observed up to day 14 in both treatment groups (day 3, 7, 4 $P < 0.01$) and the started to decrease.

There was no significant difference in reduction of *mf* counts ($P = 0.31$) or in GPX levels on day 14 ($P = 0.12$) and day 30 ($P = 0.06$) between the two treatment groups.

Conclusions: The 14 day course does not offer a significant advantage over a single dose of DEC in reducing microfilarial counts and inducing the participation of GPX related free radicals in microfilarial clearance.

P1608 Red blood cell antioxidant levels after treatment with diethyl carbamazine citrate in persons with asymptomatic microfilaraemia

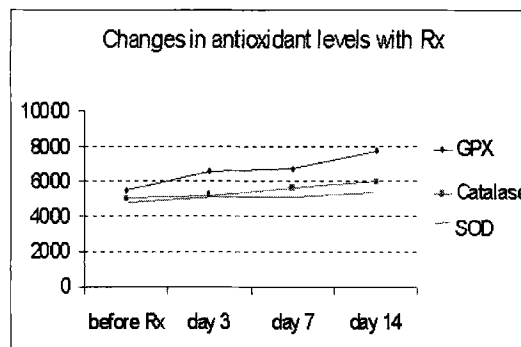
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Background: The microfilaricidal action of DEC is poorly understood. *In vitro* studies have shown that, DEC stimulates platelets to release unspecified free radicals, which have microfilaricidal effects. In asymptomatic microfilaraemics living in endemic areas, red cell glutathione peroxidase (GPX) levels are significantly higher than in asymptomatic microfilaraemics. Catalase and superoxide dismutase (SOD) levels between these two populations are not different. This suggests a possible role for GPX related free radical species in the clearance of microfilaraemia.

Aim: To study, *in vivo*, the changes in red cell GPX, catalase and SOD in asymptomatic microfilaraemic patients after treatment with DEC.

Methods: Ten patients [(6 males), mean age: 29.8 years (range 16–57)] with asymptomatic microfilaraemia were tested for red cell GPX, catalase and SOD levels using spectrophotometry before and on the 3rd, 7th and 14th day during a 14-day course of DEC. 2 mL of venous blood was collected into an EDTA bottle between 8.00 and 9.00 am on each day. Assays were done within 6 h of collection. Blood was stored at 8°C until analysis.

Results:



A gradual and significant increase in GPX levels was observed up to the 14th day of treatment. (day 3, 7 and 14 $P < 0.01$). A slower and nonsignificant increase in catalase and SOD were also observed during treatment up to day 7. ($P > 0.05$) and on day 14 the catalase level was significantly different ($P < 0.01$).

Conclusions: The early and significant rise of GPX levels suggest a rapid increase in GPX related oxidant species in blood in response to DEC treatment. The late rise in SOD and catalase levels could be due to stimulation of immunological pathways by dead parasite antigens, as these two antioxidants are known to participate in the IgE mediated immunological pathway of the host parasite relationship.

CNS viral infections

P1609 An outbreak of aseptic meningitis in Vojvodina

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Aim of the study: To investigate frequency and clinical manifestations of aseptic meningitis (AM) during the outbreak in Vojvodina, from the end of July till the end of October 2000.

Material and methods: 201 patients with signs of acute viral CNS infections treated at the Clinic for Infectious Diseases in Novi Sad were enrolled in the study. Data were collected from medical records of hospitalized patients. Diagnosis of AM was based on cyto-biochemical characteristics and negative bacterial culture of CSF, epidemiological data and typical course of the disease. Aetiological diagnosis was confirmed only in one patient, in whom rectal swab was negative, by isolation of enterovirus ECHO 30 from the culture of CSF. As the outbreak of AM occurred in late summer and the course of disease was mild, it was presumed that entero/ECHO viruses accounted for most of the cases.

Results: Among 201 patients with acute viral infection of CNS, 193 were diagnosed as AM and 8 as acute meningoencephalitis. The patients were from 2 to 54 years old. Majority of them were less than 15 years of age (156 or 82.3%), with the highest attack rates in children aged 4 and 12, respectively. The male to female ratio was 1.5:1. Monophasic course of AM was predominant (161 patients or 83, 42%), though 16, 58% (32) had biphasic course of disease. CSF cell count ranged from 10 to 2960/mm³ and in most cases (123 or 63, 40%) was 10–500/mm³. Predominance of granulocytes in CSF was noted in 99 patients (51.30%) and ranged between 50–90%; protein concentration level in CSF was higher than 0.50–2.8 g/L in 41 patients (21.24%). CSF/blood glucose ratio ranged between 0.36 and 0.48 mmol/L in 19 patients (9.84%). Leukocytosis in peripheral blood was found in 37.31% (72) patients, and ranged from 10.2 to 34.0 × 10⁹. Neutrophilic granulocytosis in WBC was registered in 95.83% of patients on admission to the hospital but 24 h later, leukocytosis was found only in 5.70% (11) of them. ESR higher than 20/50 was found in 41.45% (80) of patients. Milder form of meningoencephalitis was registered in 8 cases. Mild hemiparesis as a complication was noted in 2.49% (5) cases. It occurred at the end of hospitalization or during convalescence period. The outcome of disease was favourable in all patients.