1- **Prognostic value of microvessel density, matrix metalloproteinase 9 and P53 proteins expression in esophageal cancer.**

Background: Worldwide, esophageal carcinoma is one of the most aggressive cancers. It is relatively common in many countries and characterized by poor prognosis and rapid clinical progression.

Purpose: In this study, we aimed to evaluate the role of CD34, the marker of vascular endothelial cells, MMP-9 (matrix metalloproteinase type 9) and p53 in esophageal carcinoma.

Materials and Methods: Forty-four archival tissue specimens, 38 cases with esophageal carcinoma and six cases with normal mucosa, were immunohistochemically stained with monoclonal antibodies against CD34, MMP-9 and p53. In addition, flow cytometric DNA analysis was carried out for patients and controls.

Results: The results showed that the DNA content was diploid in all normal esophageal mucosa, whereas aneuploidy was detected in twenty cases (52.6%) out of 38. The thirty-eight cases showed positive expression of CD34 antigen. The expression of MMP-9 was identified mainly in the cytoplasm in most of cancer cells in 27 cases (71%) out of 38. On the other hand, 28 (73.7%) out of 38 were positive for p53 expression. There was a statistical significance for CD34, MMP-9 and p53 expressions with tumor stage. Microvessel density in patients with highly positive staining for MMP-9 was higher than in those with negative and weak staining for MMP-9 (p= 0.002).

Conclusion: Our data suggest that the expression of CD34 and MMP-9 is associated with tumor progression and possibly seems to be valuable markers and could offer additional information about the aggressiveness and activity of esophageal carcinoma lesions.

2- **Localization of Leucine Aminopeptidase in the Schistosoma mansoni Eggs and in Liver Tissue from Infected Mice.**

**ABSTRACT**

Infection with Schistosoma mansoni causes hepatic granuloma formation and fibrosis in response to parasite eggs. The present work localized the leucine aminopeptidase (LAP) in the Schistosoma mansoni eggs and in liver tissue sections from infected mice. Fresh eggs and livers were obtained from infected hamsters and processed for staining with the L-leucine-7-amino-trifluoromethylcoumarin specific substrate. The L-arginine-7-amino-trifluoromethylcoumarin and Bestatin (leucine aminopeptidase inhibitor) were used to test the LAP substrate specificity and reactivity. The staining pattern for that enzyme in the egg and liver tissue reflects that the leucine aminopeptidase is a major egg constituent distributed in nearly all the egg except the spine. The control substrates confirmed the substrate broad specificity of LAP. In conclusion, the LAP enzyme is a major egg antigen and the target antigen for the antipathology vaccine development studies.

3- **A Long-Term Preservation Method in liquid Nitrogen to Maintain Toxoplasma gondii.**
The possible infection of adult BALB/c mice with long-term cryopreserved RH strain of T. gondii in liquid nitrogen was investigated. Tachyzoites of Toxoplasma gondii were cryopreserved at $-196 \degree C$ in liquid nitrogen using 10% DMSO. A group of female BALB/C mice were inoculated intraperitoneally by viable tachyzoites. SDS-PAGE and western blot analyses revealed no difference between the polypeptide pattern and reactivity of tachyzoite antigens before and after preservation. However, a decrease in the mean count (6.45 x 10$^6$) of tachyzoites was observed after preservation compared with the mean count (8.36 x 10$^6$) of tachyzoites before preservation but did not reach a significant level ($p > 0.05$). Also, a non significant ($p > 0.05$) decrease in the mean viability (96%) of tachyzoites was observed after preservation, compared with the mean viability (98%) of tachyzoites before preservation. A group of mice were infected by different volumes (100- to 500 $\mu$L/mouse) of cryopreserved tachyzoites and the survival time was evaluated. The highest survival time (6-8 days) was observed using the dose of 200 $\mu$L per mouse. This dose was used as a primary inoculation dose for subsequent experiments. The thawed tachyzoites were inoculated in a group of mice by the 200 $\mu$L dose. The clinical signs of acute toxoplasmosis were observed in all mice after 6-8 days. An increase in both the mean count and the viability of the tachyzoites exudate (first generation) was observed compared with the mean count and the viability of the preserved tachyzoites. The first generation tachyzoites were inoculated in a group of mice with a dose of 100 $\mu$L/mice containing 7.18 x 10$^6$ tachyzoites. The mean tachyzoites count and viability (2nd generation) have been returned to that obtained before preservation. Also, the death time was 2-3 days. This is a reminder that the current scenario is vital not only for this kind of tachyzoites preservation technique to be effective, but also for its sustainability.

**Schistosoma mansoni major egg antigen Smp40: molecular modeling and potential immunoreactivity for anti-pathology vaccine development**

The pathogenesis of Schistosoma mansoni infection is largely determined by host T-cell mediated immune responses such as the granulomatous response to tissue deposited eggs and subsequent fibrosis. The major egg antigens have a valuable role in desensitizing the CD4$^+$ Th cells that mediate granuloma formation, which may prevent or ameliorate clinical signs of schistosomiasis. S. mansoni major egg antigen Smp40 was expressed and completely purified. It was found that the expressed Smp40 reacts specifically with anti-Smp40 monoclonal antibody in Western blotting. Three-dimensional structure was elucidated based on the similarity of Smp40 with the small heat shock protein coded in the protein database as 1SHS as a template in the molecular modeling. It was figured out that the C-terminal of the Smp40 protein (residues 130 onward) contains two alpha crystallin domains. The fold consists of eight beta strands sandwiched in two sheets forming Greek key. The purified Smp40 was used for in vitro stimulation of peripheral blood mononuclear cells from patients infected with S. mansoni using phytohemagglutinin mitogen as a positive control. The obtained results showed that there is no statistical difference in interferon-$\gamma$, interleukin (IL)-4 and IL-13 levels obtained with Smp40 stimulation compared with the control group ($P > 0.05$ for each). On the other hand, there were significant differences after Smp40 stimulation in IL-5 ($P = 0.006$) and IL-10 levels ($P < 0.001$) compared with the control group. Gaining the knowledge by reviewing the literature, it was found that the overall pattern of cytokine profile obtained...
with Smp40 stimulation is reported to be associated with reduced collagen deposition, decreased fibrosis, and granuloma formation inhibition. This may reflect its future prospect as a leading anti-pathology schistosomal vaccine candidate.

5-

Alph 1 microglobulin protein as a reliable marker for early diagnosis of renal tubular injury

Twenty five patients with renal tubular damage and ten age-matched healthy control subjects were included in this study. Urinary ?1 microglobulin (?1M) and ?2 microglobulin (?2M) were measured and the results were expressed as a ratio to urinary creatinine to avoid variation in urine flow rate. There was a highly significant increase of urinary ?1M/ creatinine ratio and ?2M/ creatinine ratio in patients as compared to healthy control groups. Also, there was a highly significant correlation between ?1M and ?2M (r=0.8, P<0.001). Stability studies revealed that, ?1M was stable in acidic and alkaline urine (P>0.05). On the other hand, ?2M showed marked deterioration in acidic urine (P<0.001). Analysis of receiver operating characteristics (ROC) curve revealed that the diagnostic performance of ?1M was superior to ?2M. The best cut off level of ?1M (13mg/g creatinine) had a diagnostic sensitivity of 95%, specificity 97% and efficacy 96.7%. As regard to ?2M, the best cut off level was 300µg/g creatinine which had a diagnostic sensitivity of 88%, specificity 90% and efficacy 85.3%. Therefore, in view of its high diagnostic performance and its greater stability, ?1M may be considered as a reliable marker of renal tubular function than ?2M marker.

6-

HIV Binding to Resting CD4 Lymphocytes Induces Production of Certain Cytokines

HIV Binding to Resting CD4 Lymphocytes Induces Production of Certain Cytokines

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ABSTRACT

Objective: To test the cytokine production in HIV infection. Design and methods: Cytokine profiles in two separate studies of HIV patients and controls are presented: Peripheral blood mononuclear cells (PBMC) from patients and controls were tested for the production of (interleukin (IL)-4, IL-5, IL-10, interferon (IFN)-?, and TNF-?) cytokines by enzyme-linked immunosorbent assay (ELISA). Both spontaneous and mitogen-induced cytokine production was measured. Results: The serum cytokine profile is altered in HIV patients compared to normal subjects. We examined if HIV binding to resting CD4 T-cells induced production of cytokines, intracellular IL-4, IL-10. TNF-?, and IFN-? expression 48 hrs after mock- or HIV-exposure of resting T-cells and T-cell. We found that HIV binding to resting T-cells upregulated expression of IFN-? and TNF-? by 24hrs), and these remained elevated during 60 hrs of observation HIV binding had no appreciable effect on IL-4 expression and at 48 hrs little effect on IL-10. EIA measurements of released cytokines in culture supernatants further showed that TNF-? and IFN-? were produced, but IL-4 was not. Furthermore, by EIA analysis, IL-2 was not
induced (data not shown), but IL-5 and IL-10 were at 3 days. It seems likely, then, that HIV-signaled resting CD4 T-cells can provide "helper" activity. Conclusions: The study herein was performed to more fully characterize HIV-signaled, resting CD4 lymphocytes. We found that HIV signaling also induced production of IFN-y, IL-5, IL-10 and TNF-?, but not IL-2 or IL-4. These cells, however, did not go into cell cycle. Further, they could secondarily respond to normal proliferation stimuli from anti-CDS cross-linking or PHA and enter into cell cycle and produce a greater number of cytokines, and they did not display any significant activation-induced apoptosis. Thus, resting CD4 lymphocytes are partially activated by HIV binding, resulting in enhanced expression of certain activation markers and cytokines.

Study of C-Reactive Protein and Interleukin-6 Serum Levels in Patients with Chronic Renal Failure

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Abstract

BACKGROUND: An elevated serum C-reactive protein (CRP) is strongly associated with morbidity and mortality in dialysis patients. However, the significance of high CRP levels in pre-dialysis patients has not been studied extensively. It has been claimed that, in dialytic patients, the hepatic synthesis of plasma CRP is primarily induced by the interleukin 6 (IL-6). Little information is available, however, regarding CRP and IL-6 plasma levels in pre-dialytic renal failure. The aim of this study was to determine the incidence of elevated serum CRP and IL-6 in pre-dialysis patients and to identify the factors that associate with serum CRP, and to correlate the levels of CRP and IL-6 with renal function and other inflammatory and nutritional factors.

METHODS: Forty pre-dialysis patients aged 40-70 years were studied. Data collected from each patient included demographics, medications, blood pressures, blood biochemistry including serum CRP, renal function, and echocardiography, as well as inflammatory and some nutritional parameters (Albumin, TG, Chol, LDL, and HDL) were measured and compared with regard to the CRP level. IL-6 was also determined in serum of patients.

RESULTS: The mean of serum CRP level was 10.44 ±7.64 mg/l and IL-6 level was 7.39 ±4.47 pg/ml in patients with a highly significant increase (p<0.0001). The mean of creatinine clearance in the patients was 24.89 ±15.50 ml/min with significant decrease (p<0.0001). CRP and IL-6 were significantly related (r = 0.637, P < 0.0001). CRP and IL-6 were related to renal function (CRP vs. Cr.cl., r =â€œ 0.704, P < 0.0001; IL-6 vs. Cr.cl., r = â€œ 0.593, P < 0.0001). A negative correlation between CRP and S-albumin was also found (r = â€œ 0.57, P < 0.0001). There was negative non significant correlation between IL-6 and albumin (r = â€œ 0.23, P = 0.15). CONCLUSIONS: We found that serum CRP was elevated in pre-dialysis patients (50% of the patients), also there were elevated serum levels of IL-6 in pre-dialysis patients (45% of the patients) with significant difference, and were inversely related to renal function (creatinine clearance) indicating more inflammations, atherosclerosis, coronary disease and tissue damage. A negative correlation between CRP and S-albumin was found confirming the link between chronic inflammation and malnutrition in chronic renal patients. In addition, a positive
correlation between serum CRP levels and several inflammatory factors was found.

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PARASITIOSIS IN HANDICAPPED CHILDREN IN AN EGYPTIAN BLIND ASYLUM

PARASITIOSIS IN HANDICAPPED CHILDREN IN AN EGYPTIAN BLIND ASYLUM

By

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Abstract

Examination of visually handicapped children and their serving staff revealed in a descending order Enterobius vermicularis, Giardia lamblia, Entamoeba histolytica, Hymenolepis nana, Ascaris lumbricoides, Cryptosporidium parvum, Trichocephalus trichura and Strongyloides stercolaris. Head lice were encountered. But, neither blood parasites nor protozoan infective agent in water for human consumption.

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SIGNIFICANCE OF TUMOR NECROSIS FACTOR- ALPHA IN LIVER CIRROSION WITH VIRAL HEPATITIS COMBINED WITH SCHISTOSOMIASIS

SIGNIFICANCE OF TUMOR NECROSIS FACTOR- ALPHA IN LIVER CIRROSION WITH VIRAL HEPATITIS COMBINED WITH SCHISTOSOMIASIS

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ABSTRACT

Schistosomiasis mansoni and viral hepatitis constitute the most common causes of chronic liver disease in Egypt. Viral hepatitis infection runs a more serious course in patients with schistosomiasis than in those without. Patients with schistosomiasis were also found to be more susceptible to delta infection than those without. This could be due to defect in cell mediated immunity caused by schistosomiasis. Both TNF-a and endotoxins can induce the production of intracellular adhesion molecule (ICMA1) which perform an important function in directing cells to sites of inflammation as well as activating them once they arrive. The aim of this work is to assess the effect of schistosomiasis on the activity of liver cirrhosis due to viral infection and its relation to TNF a. This study included one hundred and thirty nine patients having chronic viral liver disease attending National Liver Institute Outpatient Clinic. Full history taking, clinical examination, rectal snip biopsy for bilharziasis, liver function tests, virologic liver profile, abdominal U/S, ultrasonographic guided needle liver biopsy and histological liver examination, and measurement of serum TNF-a. TNFa was significantly elevated in schistosomal groups than in non-schistosomal groups (P<0.001). TNFa was significantly elevated in LC group with Sch than in ChH and LC without Sch among cases with HBsAg +ve. Also TNF was significantly higher in Schistosomal groups than in non-
schistosomal groups among cases with HCV, HBcAb, combined HBcAb and HCV and combined HBsAg and anti-HCV. Our results show that TNFα represents a characteristic feature of chronic liver disease with Sch. Our results shows that TNFα was significantly related to HA in ChH group with Sch.

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**EARLY DEVELOPMENT OF OSTEOPOROSIS IN MALE SMOKERS WITH HYPOANDROGENISM DUE TO FASCIOLIASIS WITH OR WITHOUT SCHISTOSOMIASIS ADDED BY LIFE STYLE**

The multifactor outcome of hypoandrogenemia with the impact of oxidative stress induced by glucose intolerance, fascioliasis with or without schistosomiasis and cumulative smoking influence on bone remodeling and the early development of osteoporotic manifestations were studied.

The effect on vascular endothelium immune mediated mechanisms and antioxidant capacity were monitored in cases of youth aged selected male smokers involving 20 with hypoandrogenemia who were either subjected to sedentary life style, glucose into-lance fascioliasis hepatic fibrosis (FHF) (G1) or without (G2) and G1 after following 6 months therapy (G3). Monitoring of clinical picture and biochemical assessments of osteoporotic indices (osteocalcin, bone alkaline phosphatase, parathyroid hormone, urinary cyclic AMP), hypoandrogenism (dehydroepiandrosterane sulphate or DHEAS & testosterone) glycemic determinant (insulin) immuno-infla-mmatory response (inter-leukein-6, tumor necrosis factor ?, E-selectin, ceruloplasmin) smoking index (serum cotinine), total antioxidant capacity (AOC) and lipid peroxidation (malondialdehyde) was done before and after 6 months therapeutic program involving supplement of DHEAS, mirazid, chromium picolinate, and megavit zinc alongside smoking cessation and physical exercise daily for at least 30 minutes. Treatment with Mirazid supplied as 10 mg/kg for 6 successive days resulted in 100% cure of fascioliasis whether single or combined with schistosomiasis.

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**OXIDATIVE STRESS AND IMMUNE-SUPPRESSION IN TOXOPLASMA GONDII POSITIVE BLOOD DONORS: IMPLICATIONS FOR SAFE BLOOD TRANSFUSION**

Abstract

The sero-markers of Toxoplasma gondii and oxidative stress (OS) were determined in a group of 260 blood donors attending blood banks in Greater Cairo. Twenty-four blood donors with the highest anti-T. gondii IgG titre were tested for IgG avidity. Of whom 4 (16.6%) had low IgG avidity antibodies, documenting recent infection, 6 (25%) had borderline avidity and 14 (58.3%) showed high avidity, ruling out recent infection. The plasma level of malondialdehyde (MDA) was significantly higher and activity of glutathione peroxidase (GSH-Px) and level of tocopherol (?, ?, & ?) fractions (P < 0.001) were lower in T. gondii-seropositive than in seronegative blood donors. This significant alteration in redox status between seropositive and seronegative donors suggested a degradation of their antioxidant enzymes caused by OS induced by increased free radicals attributable to toxoplasmosis infection. T. gondii infection also had a prominent influence on the association between OS biomarkers and immune-suppression status in seropositive donors.
**MIRAZID IN TREATMENT OF THREE ZOONOTIC TREMATODES IN BENI-SWEIF GOVERNORATE, UPPER EGYPT**

Abstract

A total of 60 patients with schistosomiasis (40), fascialiosis (15) and heterophyiasis (5) were selected Beni-Sweif and Mansoura Districts and subjected to history taking, clinical examination, Kato thick smear, sedimentation and hatching test (for schistosomiasis cases) at the beginning of the study, 2 & 3 months after treatment with Oleo-resin of Myrrh (Mirazid®) in a dose of 10mg/kg/day for 6 consecutive days an hour before breakfast. The results showed a significant improvement in symptoms with minimal negligible or no side effects. The cure rates, 2 & 3 months after treatment were 80.7%% & 11.8%% for schistosomiasis-sis, 93.3% & 6.6% for fascioliasis, and 100% for heterophyiasis. The clinical picture of schistosomiasis before treatments were easy fatigability, anorexia, nausea, vomiting, epigastria pain, abdominal distention, right upper guarant pain, colicky abdominal pain, left upper and/or lower guarant pain, abdominal rumbling, dysentery, diarrhea, rectal bleeding, constipation, and alternating bowel habit. Those of fascioliasis were abdominal distention, dripping of saliva, right upper guarant, colicky abdominal pain, weight loss, easy fatigability, intermittent jaundice, anorexia, nausea, vomiting, epigastria, left upper and/or lower quadrant pain, right layer quadrant pain, loin pain, abdominal rumbling, diarrhea, constipation, and alternating bowel habit. The safety and efficacy of C. molmol extract in treating heterophyiasis (100%), fascioliasis (100%) and schistosomiasis (92.5%) were documented.

Key words: Schistosomiasis, fascialiosis, heterophyiasis, Mirazid, clinical, parasitological follow-up.

**Helicobacter pylori and Hepatitis C virus coinfection in Egyptian patients**

Abstract

Introduction: Chronic hepatitis C virus (HCV) infection is a leading cause of end-stage liver disease worldwide. It has been shown that Helicobacter pylori (H. pylori) plays an important role in chronic gastritis, peptic ulcer disease and gastric malignancies, and its eradication has been advocated. The association between H. pylori infection and liver cirrhosis in patients with hepatitis C virus has been documented in different parts of the world; nevertheless, no conclusive data is available in Egypt. Materials and Methods: In the present study, the status of H. pylori infection was sought in 90 patients with chronic HCV infection and in 66 HCV-free healthy controls. Results: The study showed that the H. pylori positivity was increased significantly (P = 0.03) in the HCV-infected patients when compared to that in healthy controls, where H. pylori infection was found in 50 (55.6%) out of 90 of the HCV-infected patients versus 26 (39.4%) out of 66 of the healthy controls. In HCV-infected patients, the prevalence of H. pylori infection was increased significantly (P = 0.04) from chronic active hepatitis to cirrhosis. H. pylori infection was present in 6/18 (33.3%), 10/21 (47.6%), 16/27 (59.3%), 18/24 (75.0%) patients with chronic active hepatitis, Child-Pugh score A, Child-Pugh score B and Child-Pugh score C, respectively. More importantly, the prevalence of H. pylori infection in HCV-infected patients was increased very significantly (P = 0.003) with increasing Meld (model for end-stage liver disease) score. The prevalence of H. pylori was documented in
9/28 (32.1%) patients with Meld score \( \leq 10 \) and in 41/62 (66.1%) patients with Meld score >10. Conclusion: It may be stated that our results collectively reflect a remarkable increase in H. pylori prevalence with advancing hepatic lesions, and the eradication treatment may prove beneficial in those patients with chronic hepatitis C.