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LE Magazine February 1996

**ABSTRACTS**

## **Anxiety and Coenzyme Q10**

### **Treating anxiety while minimizing abuse and dependence**

Anxiety is common and often disabling. Although effective treatments are available, the use of anti anxiety medication remains controversial. Some of the controversy involves the relative benefits of psychological versus pharmacological interventions. Much of the expressed concern, however, relates to the risks of abuse and dependence associated with standard anti anxiety drugs. In some instances, concern about these risks prevents patients from receiving potentially effective treatment. In other instances, failure to recognize possible abuse and dependence and abuse, including patient characteristics and the pharmacological profiles of anxiolytic drugs. Specific recommendations about how to minimize abuse and dependence through such measures as diagnostic assessment, patient education, drug selection, and treatment planning will be offered.(44 Refs.)

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*J Clin Psychiatry (UNITED STATES) May 1993, 54 Suppl p44-51*

## **Tranquillers and health care in crisis**

This paper addresses the issue of the crisis of therapeutic efficacy in Britain through a case study of benzodiazepine tranquillizer dependence. The paper traces the rise of tranquillizers and the crisis of legitimacy in prescribing behavior in the 1980's. It documents growing concern with dependence and the claims made about it by experts and consumer groups. The paper goes on to analyze the importance of the television in these claims making activity and its influence in shaping perceptions. Finally, we consider the implications of these events for the future of benzodiazepine tranquillizers as a form of treatment.(48 Refs.)

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*Soc Sci Med (ENGLAND) 1991, 32(4) p449-54,*

## **A six year clinical study of therapy of cardiomyopathy with coenzyme Q10**

One hundred and forty-three cases of chronic, stable, non-secondary, non hypertrophic cardiomyopathy, 98% of whom were in NYHA Classes III and IV, were given 100 mg of coenzyme Q10 orally in addition to their

conventional medical programme in an open-label long-term study. Blood CoQ10 levels, clinical status, myocardial function and survival have been recorded now for almost 6 years. Mean control/CoQ10 levels of 0.85 micrograms/ml rose to 2 micrograms/ml in 3 months and remained stable at that level. Mean ejection fraction of 44% measured by systolic time interval analysis rose to 60% within 6 months and stabilized at that level with 84% of patients showing statically significant improvement. Eighty-five percent of patients improved by one or two two NYHA Classes. Survival figures were encouraging with an 11.1% mortality in 12 months and 17.8% mortality in 24 months, comparing favorably with several reports in the literature. There was no positive evidence of toxicity or intolerance in a total of 368.9 patient-years of exposure. Coenzyme Q10 is safe and effective long-term therapy for chronic cardiomyopathy.

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*Int J Tissue React(SWITZERLAND) 1990, 12(3) P169-71,*

## **Usefulness of coenzyme Q10 in clinical cardiology: a long-term study**

Over an eight year period (1985-1993), we treated 424 patient with various forms of cardiovascular disease by adding coenzyme Q10 (CoQ10) to their medical regimens. Doses of CoQ10 ranged from 75 to 600 mg/day by mouth (average 242 mg). Treatment was primarily guided by the patient's clinical response. In was instances, CoQ10 levels were employed with the aim of producing a whole blood level greater than or equal to 2.10 micrograms/ml (average 2.92 micrograms/ml, n = 297). Patients were followed for an average of 17.8 months, with a total accumulation of 632 patient years. Eleven patients were omitted from this study: 10 due to noncompliance and one who experienced nausea. Eighteen deaths occurred during the study period with 10 attributable to cardiac causes. Patients were divided into six diagnostic categories ischemic cardiomyopathy (IMC) dilated cardiomyopathy (DCM) primary diastolic dysfunction (PDD) hypertension (HTN), mitral valve prolapse (MVP) and valvular heart disease (VHD) For the entire group and for each diagnostic category we evaluated clinical response according to the New York Heart Association (NYHA) functional scale, and found significant improvement of 424 patients, 58 per cent improved by one NYHA class, 28% by two classes and 1.2% by three classes. A statistically significant improvement in myocardial function was documented using the following echo cardiographic parameters: left ventricular wall thickness, mitral valve inflow slope and fractional shortening Before treatment with CoQ10, most patients were taking from one to five cardiac medications. During this study overall medication requirements dropped considerably: 436 stopped between one and three drugs. Only 6% of the patients required the addition of one drug. No apparent side effects from CoQ10 treatment were noted other than a single case of transient nausea In conclusion, CoQ10 is a safe and effective adjunctive treatment for a broad range of cardiovascular diseases, producing gratifying clinical responses while easing the medical and financial burden of multi drug therapy.

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*Mol Aspects Med (ENGLAND) 1994, 15 Suppl ps165-75*

## **Therapy with coenzyme Q10 of patients in heart failure who are eligible or ineligible for a transplant**

Twenty years of international open and seven double blind trials established the efficacy and safety of coenzyme Q10 (CoQ10) to treat patients in heart failure. In the US, ca. 44000 patients under 65 years are eligible for transplants, but donors are less than 1/10th of those eligible, and there are many more such patients over 65, both eligible and ineligible. We treated eleven exemplary transplant candidates with CoQ10; all improved; three improved from Class IV to Class I; four improved from Class III-IV to Class II and two improved from Class III to Class I or II. After CoQ10, some patients required no conventional drugs and had no limitation in lifestyle. The marked improvement is based upon correcting myocardial deficiencies of CoQ10 which improve mitochondrial bioenergetics and cardiac performance. These case histories, and very substantial background proof of efficacy and safety, justify treating with

CoQ10 patients in failure awaiting transplantation.

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*Biochem Biophys Res Commun (U.S.)* Jan 15 1992 182 (1) p247-53

## **Effective and safe therapy with coenzyme Q10 for cardiomyopathy**

Coenzyme Q10 (CoQ10) is indispensable in mitochondrial bio energetics and for human life to exist. 88/115 patients completed a trial of therapy with CoQ10 for cardiomyopathy. Patients were selected on the basis of clinical criteria, X-rays electrocardiograms echocardiography and coronary angiography Responses were monitored by ejection fractions, cardiac output, and improvements in functional classifications (NYHA). Of the 88 patients 75%-85% showed statistically significant increases in two monitored cardiac parameters. Patients with the lowest ejection fractions (approx. 10%-30%) showed the highest increases (115 delta %-210 delta %) and those with higher ejection fractions (50%-80%) showed increases of approx. 10 delta %-25 delta % on therapy. By functional classification, 17/21 in class IV, 52/62 in class III and 4/5 in class II improved to lower classes. Clinical responses appeared over variable times, and are presumably based on mechanisms of DNA-RNA-protein synthesis of apoenzymes which restore levels of CoQ10 enzymes in a deficiency state. 10/21 (48%) of patients in class IV 26/62 (42%) in class III and 2/5 (40%) in class II had exceptionally low control blood levels of CoQ10. Clinical responses on therapy with CoQ10 appear maximal with blood levels of approx. 2.5 micrograms CoQ10/ml and higher during therapy.

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*Klin Wochenschr (GERMANY WEST)* Jul 1 1988, 66 (13) p583-90

## **Pronounced increase of survival of patients with cardiomyopathy when treated with coenzyme Q10 and conventional therapy**

During 1985-86, 43/137 patients with cardiomyopathy, Classes II, III and IV had ejection fractions (EF) below 40%, and a mean EF of 25.1 +/- 10.3%. During treatment of these 43 patients with coenzyme Q10 (CoQ10) EF increased to 41.6 +/- 14.3% (p less than 0.001) over a mean period of 3 months (range, 2-4 months). At four subsequent periods up to 96 months. EF ranged from 43.1 +/- 13.9 to 49.7 +/- 6.4% (each period, p less than 0.001). The mean CoQ10 control blood level was 0.85 +/- 0.26 micrograms/ml which increased on treatment to 1.7 to 2.3 micrograms/ml for five periods up to 36 months (each period, p less than 0.001) The survival rates for all 137 patients treated with CoQ10 and for the 43 patients with EF below 40% were both about 75%/46 months. These two survival rates were comparable between 24 and 46 months, which is of extraordinary significance and importance when compared to survival of about 25%/36 months for 182 patients with EF below 46% on conventional therapy without CoQ10. The improved cardiac function and pronounced increase of survival show that therapy where CoQ10 is remarkably beneficial due to correction of CoQ10 deficiency in mechanisms of bio energetics.

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*Int J Tissue React (SWITZERLAND)* 1990, 12 (3) p163-8

## **Italian multi center study on the safety and efficacy of coenzyme Q10 as adjunctive therapy in heart failure: when treated with coenzyme Q10 and conventional therapy CoQ10 Drug Surveillance Investigators**

Digitalis, diuretics and vasodilators are considered the standard therapy for patients with congestive heart failure, for which treatment is tailored according to the severity of the syndrome and the patient profile. Apart from the clinical seriousness, heart failure is always characterized by an energy depletion status, as indicated by low intramyocardial

ATP and coenzyme Q10 levels We investigated safety and clinical efficacy of Coenzyme Q10 (CoQ10) adjunctive treatment in congestive heart failure which had been diagnosed at least 6 months previously and treated with standard therapy A total of 2664 patients in NYHA classes II and III were enrolled in this open noncomparative 3-month post marketing study in 173 Italian centers. The daily dosage of CoQ10 was 50-150 mg orally with the majority of patients (78%) receiving 100 mg/day. Clinical and laboratory parameters were evaluated at the entry into the study and on day 90; the the assessment of clinical signs and symptoms was made using from two to seven-point scales. The results show a low incidence of side effects: 38 adverse effects were reported in 36 patients (1.5%) of which 22 events were considered as correlated to the test treatment. After three months of test treatment the proportions of patients with improvement in clinical signs and symptoms were as follows: cyanosis 78.1%, oedema 78.6%, pulmonary rales 77.8%, enlargement of liver area 49.3%, jugular reflux 71.81%, dyspnoea 52.7%, palpitations 75.4%, sweating 79.8%, subjective arrhythmia 63.4%, insomnia 662.8%, vertigo 73.1% and nocturia 53.6%. Moreover we observed a contemporary improvement of at least three symptoms in 54% of patients; this could be interpreted as an index of improved quality of life.

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*Mol Aspects Med (ENGLAND) 1994, 15 Suppl ps287-94,*

## **Treatment of occasional hypertension with coenzyme Q10**

A total of 109 patients with symptomatic essential hypertension presenting to a private cardiology practice were observed after the addition of CoQ10 (average dose, 225 mg/day by mouth) to their existing antihypertensive drug regimen. In 80 per cent of patients, the diagnosis of essential hypertension was established for a year or more prior to starting CoQ10 (average 9.2 years). Only one patient was dropped from analysis due to noncompliance. The dosage of CoQ10 was not fixed and was adjusted according to clinical response and blood CoQ10 levels. Our aim was to attain blood levels greater than 2.0 micrograms/ml (average 3.02 micrograms/ml on CoQ10). Patients were followed closely with frequent clinic visits to record blood pressure and clinical status and make necessary adjustments in drug therapy. Echocardiograms were obtained at baseline in 88% of patients and both at baseline and during treatment in 39% of patients. A definite and gradual improvement in functional status was observed with the concomitant need to gradually decrease antihypertensive drug therapy within the first one to six months Thereafter, clinical status and cardiovascular drug regimen stabilized with a significantly improved systolic and diastolic blood pressure. Overall New York Heart Association (NYHA) functional class improved from a mean of 2.40 to 1.66 (P 0.001) and 51% of patients came completely off of between one and three antihypertensive drugs at an average of 4.4 months after starting CoQ10. Only 3% of patients required the addition of one antihypertensive drug. In the 9.4% of patients with echocardiograms both before and during treatment, we observed a highly significant improvement in left ventricular wall thickness and diastolic function.

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## **Progress on therapy of breast cancer with vitamin Q10 and the regression of metastases**

Over 39 years, data and knowledge have internationally evoked from biochemical, biomedical and clinical research on vitamin Q10 (coenzyme Q10; CoQ10) and cancer which led in 1993 to overt complete regression of the tumors in two cases of breast cancer. Continuing this research, three additional breast cancer patients also underwent a conventional protocol of therapy which included a daily oral dosage of 390 mg of vitamin Q10 (Bio-Quinone of Pharma Nord) during the complete trials over 3-5 years. The numerous metastases in the liver of a 44-year-old patient "disappeared and no signs of metastases were found elsewhere. A 49- year-old patient, on a dosage of 590 mg of vitamin Q10, revealed no signs of tumor in the plural cavity after six months, and her condition was excellent. A 75-year-old patient with carcinoma in one breast, after lumpectomy and 390 mg of CoQ10, showed no cancer in the tumor bed or

metastases. Control blood levels of CoQ10 of 0.89-0.97 and of 0.62 micrograms/ml increased to 3.34- 3.64 and to 3.77 micrograms/ml, respectively on therapy with CoQ10 for patients A-MRH and EEL.

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*Biochem Biophys Res Commun (U.S.) Jul 6 1995, 212 (1) P172-7*

## **Survival of cancer patients on therapy with coenzyme Q10**

Over ca. 25 years, assays in animal models established the hematopoietic activities of coenzyme Q's in rhesus monkeys, rabbits, poultry, and children having kwashiorkor. Surprisingly a virus was found to cause a deficiency of CoQ10. Patients with AIDS showed a "striking"-clinical response to therapy with CoQ10. The macrophage potentiating activity of CoQ10 was recorded by the carbon clearance method. CoQ10 significantly increased the levels of IgG in patients. Eight new case histories of cancer patients plus two reported cases support the statement that therapy of cancer patients with CoQ10, which has no significant side effect, has allowed survival on an exploratory basis for periods of 5-15 years. These results now justify systematic protocols. (15 Refs.)

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*Biochem Biophys Res Commun (U.S.) Apr 15 1993, 192 (1) p241-5,*

## **Partial and complete regression breast cancer in patients in relation to dosage coenzyme Q10**

Relationships of nutrition and vitamins to the genesis and prevention of cancer are increasingly evident. In a clinical protocol 32 patients having "high-risk"- breast cancer were treated with antioxidants, fatty acids, and 90 mg. of CoQ10. Six of the 32 patients showed partial tumor regression. In one of these 6 cases the dosage of CoQ10 was increased to 390 mg. In one month, the tumor was no longer palpable and in another month, mammography confirmed the absence of tumor. Encouraged, another case having a verified breast tumor after non-radical surgery and with verified residual tumor in the tumor bed was then treated with 300 mg CoQ10. After 3 months, the patient was in excellent clinical condition and there was no residual tumor tissue. The bio energetic activity of CoQ10, expressed as hematological or immunological activity, may be the dominant but not the sole molecular mechanism causing the regression of breast cancer.

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*Biochem Biophys Res Commun (U.S.) Mar 30 1994, 199 (3) p1504-8*

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