

DRUG INFORMATION CENTER

PHARMA INFO-LINE

Drugs that should not be prescribed For Myasthenia gravis patients



Myasthenia gravis (MG) is a disease of the neuromuscular junction in which normal transmission of the neuron-to-muscle impulse is impaired or prevented by acetylcholine receptor antibodies. [1]

You may not see a lot of patients with myasthenia gravis during your life career, unless you are a neurologist of course, that is because the prevalence of it is about 3 - 4 per 100000 and incidence rate 2-5 patients every year per million, this means that in a country like Egypt with a population of 70 millions you would expect 140 newly diagnosed patients every year. The predominant age is 20-40 however it can occur at any age. Females are more prone to MG than males and the ratio (females: males) is 3:2 in both childhood and adulthood. [2, 3] The clinical features include thymoma which occurs

in approximately 10% of those affected and the prognosis in such individuals tends to be worse.

In the majority of people, weakness affects muscles of the head, neck, and limbs (generalized myasthenia), but in some others the weakness is restricted to the muscles of the eyes (ocular myasthenia).

The muscles most often affected in generalized myasthenia are those of the eyes, with ptosis and double vision (diplopia), of mastication, swallowing, and speech, and finally those of respiration.

Initially, the affected muscles have normal or near normal strength. However, with repeated use, progressive weakness develops. Therefore, ptosis and diplopia become worse as the day progresses, speech becomes slurred with continued conversation, or the individual may be unable to finish eating because of increasing difficulty with chewing and swallowing. In some individuals myasthenia gravis is a life-

threatening illness because of respiratory weakness which may become severe enough (myasthenic crisis) to necessitate mechanical ventilation. [4]

The standard treatment for myasthenia gravis include the use of longer-acting anticholinesterase agents and thymectomy. Immunosuppressive drugs are reserved for those individuals with generalized myasthenia who do not respond sufficiently to other therapy. However in those individuals with significant persistent symptoms, plasmapheresis has also become another mode of treatment. [4]

In addition to the well known precipitating factors such as infection and surgery, several classes of drugs had been reported to induce or exacerbate myasthenia gravis (iatrogenic MG). Except for **penicillamine** which has definite association with induction or exacerbation of MG, almost all the other reported drugs have either probable or possible associations. **The table in the next page** shows these categories according to their reports. [1]

Recently (Perrot et al, 2006) have reported 2 cases myasthenic patients in whom treatment with the new semisynthetic antibacterial agent **telithromycin** was associated with either exacerbation or unmasking of MG. Furthermore they

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Front page article summary

- Myasthenia gravis affects females more than males.
- Many factors can precipitate MG including surgery, infection and some drugs.
- Imipenem/cilastatin, erythromycin, tilethromycin, ciprofloxacin, aminoglycosides and ampicillin had been reported to exacerbate MG.
- Penicillamine has definitive association with MG induction and exacerbation.

had analyzed 8 more cases which had been reported earlier to the French pharmaco-vigilance system.

In their report they had addressed the potential risk of telithromycin to induce life-threatening situation when used in myasthenic patients, they also had found an important common feature in seven of the eight cases; that symptoms of severe exacerbation occurred within 2 hours of first telithromycin intake. [5]

In conclusion:

Both clinicians and pharmacists should consider extreme vigilance when prescribing or dispensing drugs for MG patients, it is advisable if clinically possible that alternative medications from other classes be prescribed instead of these tabulated drugs because of their documented deleterious effects in reports. It is also advisable to counsel MG patients to immediately report symptoms like generalized muscle weakness, ptosis and dysphagia when new drug therapy is prescribed for them.

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Drugs that had been reported to induce or exacerbate MG:

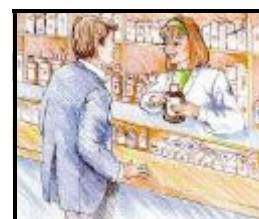
Definite association	Probable association	Possible association
penicillamine	ciprofloxacin	ampicillin
	phenytoin	anticholinergic drugs
	aminoglycoside antibiotics	erythromycin
	Lithium	radiocontrast agents
	procainamide	verapamil.
	quinidine sulfate	Chloroquine
	beta-adrenergic receptor-blocking drugs (including eye drops)	imipenem /cilistatin
		levonorgestrel
		methocarbamol
		phenothiazine antipsychotics
	propafenone	
	pyrantel	
	transdermal nicotine	

Pharmacists among most trusted professionals in Canada

In Canadian survey that was done in December 2006 by Ipsos; pharmacists were among the professionals Canadians deem most trustworthy. Pharmacists were voted trustworthy by 86% of those surveyed which is the second best among health care professionals, in this survey nurses were better than pharmacist by only 1%, as they got 87% of votes, while doctors got (80%).

Ipsos is an independent company, owned and managed by research professionals their focus is survey-based research. You can follow this link to visit their website.

<http://www.ipsos-na.com/news/>



The Acupuncture Controversy

Introduction and history

There is no doubt about the importance of acupuncture as a therapy in East Asian medicine. Using peculiar technique for the treatment of headache by placing pins in the hands or treating asthma by placing needles in the feet had puzzled the modern medicine for many years. [1]

Acupuncture has been used for over 3000 years in China, first it involved shaman like rituals to calm demons which had been replaced later by philosophical systems such as Confucianism and Taoism [1-3]

Differences between acupuncture and western medicine

While the East Asian medicine tries to detect a qualitative whole picture of the shape or regions of a person's signs and behaviors the western medicine looks for another area namely the scientific and quantitative measures such as blood pressure and cholesterol level. [4, 5]

Concept of Acupuncture (Yin-Yang and Qi)

Yin-Yang is the basic believe of China, they are recognizable in images like the weather. While Yin is associated with cold, darkness, and stable, passive in nature and calm, Yang is completely the opposite; with heat, light, stimulated, excessive, dominant, in continuous motion, and with dynamic potential.

Qi which is pronounced (Chee) is the linkage in the

cosmos that has indefinite forms and provides a rationale for explaining change and linking phenomena. Simply it is the *basic life energy*.

Imbalances in Yin–Yang and Qi would explain any illness or symptoms that a patient would complain of.

The Chinese believe that diseases which affect man can be treated by dynamical harmonization of these three factors. Therefore acupuncture is used to shift a person's unique "climate." It can moisten, dry, cool, warm, augment, deplete, redirect, reorganize, unblock, stabilize, raise, or lower a person's weather patterns. Fine needles are inserted into precisely defined, specific points on the body to correct disruptions in harmony.

Different techniques are used to do this procedure among which; Heat stimulation, which is known as moxibustion, uses the herb *Artemisia vulgaris* (common mugwort) that can be burned near the acupuncture point to warm or move the Qi. Hand pressure ("acupressure") is also sometimes applied.

There are about 365 points that are located on 14 main channels (or meridians) connecting the body in a web-like interconnecting matrix. [1, 6]

Sham; the control procedure

In clinical studies for acupuncture; In order to evaluate the technique, 2 placebos are commonly used; first, Sham acupuncture, in which the used techniques are not intended to stimulate known acupuncture points, and the second is the no needle group. Currently there is no agreement on correct needle placement in the Sham acupuncture. Furthermore in studies that were performed for pain relief, sham acupuncture often seems to have either intermediate effects between the placebo (no needle group) and 'real' acupuncture points. In some studies it may even have effects similar to those of the 'real' acupuncture points. In conclusion the placement of a needle in any position elicits a biological response that complicates the interpretation of studies involving sham acupuncture. Therefore there is substantial controversy over the use of sham acupuncture in control groups. This may be less problematic in studies not involving pain. [7]

Acupuncture in the United States

After looking at the evidence from controlled studies and meta-analysis for the therapeutic uses of acupuncture the National Institutes of Health Acupuncture Consensus Development Panel (NIHCDP) concluded that there is strong evidence for acupuncture effectiveness in the treatment of postoperative and chemotherapy induced nausea and vomiting. And to a lesser evidence extent may be useful in cases of headache, low back pain, alcohol dependence, and paralysis resulting from stroke. Furthermore the panel concluded that there are many other conditions have been treated by acupuncture where the World Health Organization, for example, has listed more than 40 disease conditions for which the technique may be indicated. [7]

Three years before this consensus declaration The Food and Drug Administration (FDA) had reclassified the acupuncture needles from Class III (experimental) medical devices to Class II (non-experimental but regulated) medical devices. That reclassification was based on a meeting that was held at 1994 and was sponsored by the United States National Institutes of Health (NIH) Office of Alternative Medicine and the United States, that was entitled "Workshop on Acupuncture," [8]

Proposed scientific mechanism

Basic-science research is now revealing acceptable mechanisms by which acupuncture could provide these physiologic effects; multiple research approaches have shown that acupuncture activates endogenous opioid mechanisms and recently by using functional magnetic resonance imaging, scientists have suggested that acupuncture has regionally specific, quantifiable effects on relevant brain structures. Being a safe procedure acupuncture is becoming more popular and is rapidly expanding in the United States. [1]

On the other hand many acupuncture clinical trials were with weak hypothesis for proving effectiveness, therefore many calls were made for the workers in the medical field to design truly double-blind, sham-controlled trials using adequate acupuncture treatment. Whereas weak or strong hypothesis of acupuncture should be addressed clearly in adequate sample sizes in order to allow both positive and negative conclusions. [9]

In response to these calls, 2 recent studies; one for migraine (JAMA 2005), and the second for hypertension (Hypertension 2006) were both designed in randomized, controlled manner to investigate the effectiveness of acupuncture in these 2 common disorders. [10, 11]

The migraine study which was a German multi-center study involving 18 outpatient centers, had included 302 patients (88% of them are women) with a mean age of 43 years who had been diagnosed to have migraine headaches were classified into three groups (Acupuncture, sham acupuncture, or waiting list control). Patients had received 12 sessions of Acupuncture or sham acupuncture over a period of 8 weeks. All patients were asked to complete headache diaries from 4 weeks before to 12 weeks after randomization and from week 21 to 24 after randomization.

No difference was detected between the acupuncture and the sham acupuncture groups in reducing the mean number of days with headache of moderate or severe intensity. A reduction of 2.2 days in both groups from baselines of 5.2 days and of 5.0 days in acupuncture and the sham acupuncture respectively, while the waiting list control had a reduction of only 0.8 days from a baseline of 5.4 days. The authors concluded that acupuncture was no more effective than sham acupuncture in reducing migraine headaches although both interventions were more effective than a waiting list control. [10]

Furthermore the hypertension study showed that Mass, standardized or individualized traditional Chinese acupuncture is no better than the control procedure (Sham acupuncture) in reducing blood pressure (BP) in patients with hypertension. The Stop Hypertension with the

Acupuncture Research Program, **SHARP**; had enrolled 192 patients with untreated hypertension (average BP 149/93 mm Hg). The researchers randomly assigned the participants to undergo either standardized acupuncture, individualized acupuncture, or sham acupuncture.

The patients attended up to 12 sessions over the course of 6 to 8 weeks, and their BP readings were noted every 2 weeks for a period of 10 weeks. When all confounding factors were taken into account, the researchers were unable to find a significant benefit in any of the 3 groups. Each intervention group experienced reductions in both systolic (at or more than 3.55 mm Hg) and diastolic (at or more than 2.81 mm Hg) blood pressures [11]

The results of these 2 recent studies gave the opportunity for critiques to stand against the use of acupuncture and even some of them have called it "*long needles put in strange places*". [12]

Conclusion:

Whether or not standard acupuncture differed from Sham acupuncture in the 2 recent randomized controlled studies, the fact that this trend had been used for thousands of years as the main therapy in several Asian countries can not be just left over without careful analysis. It seems that the use of Sham acupuncture as a placebo needs to be reviewed in order to decide the validity of the technique as a control in the clinical trials.

For the present time; the better tolerability and well documented evidence for effectiveness of acupuncture in some disease conditions still favor this trend.

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FDA approves Alli® (orlistat 60 mg capsules) over-the-counter

The FDA has recently approved an over-the-counter version of the weight loss drug Xenical® (orlistat 120mg). The lipase inhibitor will be sold under the name Alli® as a 60 mg capsule which represents half the strength of the prescription drug Xenical®.

Alli® is meant to be used by adults with a Body Mass Index BMI of 27 or more, in conjunction with a reduced-calorie diet and exercise plan. Users can take up to three capsules a day, one with each fat-containing meal, and should take a multivitamin at bedtime, as the drug can block the absorption of some vitamins especially the fat soluble ones such as Vitamin A, D, E and K.

The most common side effects are diarrhea and other changes in bowel habits, which can be reduced by eating a low-fat diet. The drug is contraindicated in transplant recipients as it may interact with transplant drug therapy. Also it is not for people who have problems absorbing food.

Patients on anticoagulants or who are being treated for diabetes or thyroid disease should only use the product under physician supervision.

<http://www.fda.gov/bbs/topics/NEWS/2007/NEW01557.html>

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