



Dysautonomia

(Cause of chronic fatigue, dizziness and syncopal episodes)

Dysautonomia is a frequent condition that can cause poor quality of life and usually goes undiagnosed. It is particularly frequent in people with the Joint Hypermobility Syndrome (JHS). These people may not even know that they have lax (hypermobile) joints and physicians usually pay no attention to this condition and do not make the diagnosis. JHS can produce musculoskeletal complaints (joint pain, recurrent tendinitis, joint sub-luxations, etc) and problems derived from weak tissues (dysautonomia, hernias, varicose veins, uterine and mitral valve prolapse, myopia, spinal disc disease, early osteoarthritis and early osteoporosis).

Dysautonomia (Dyt) is due to an alteration of the autonomous nerve system (ANS) (vaso-vagal imbalance) and to a genetic alteration of the collagen matrix of the vein wall, which by producing dilatation of the veins contributes to the fall in blood pressure (BP). The ANS, an involuntary system, regulates the most important functions of the body, such as, pulse, blood pressure, body temperature and respiration.

Sudden changes, such as getting out of bed suddenly, or standing in line or while walking slowly in the Malls or supermarket, or after eating a big meal, specially with alcohol, the blood return to the heart diminishes and as a result the BP drops suddenly and the brain oxygenation decreases. When someone stands up suddenly, 300 to 800 ml of blood stay in the abdomen or lower extremities and in patients with Dyt the body is incapable to compensate rapidly and symptoms appear (dizziness, head aches, fatigue, syncope).



A good analogy to explain this phenomenon is what happens to the fluid in a half empty bottle. If we move it from the horizontal to the vertical position, we see that the fluid stays at the bottom of the bottle. Experiences with rabbits show the same phenomenon. If we keep them standing, while holding them from the ears, we see that their behind increases in volume and they fall unconscious. The reason for this is that their veins do not

have valves to stop the blood from going backwards. The same happens to people with Dyt and this is the reason why they feel faint, dizzy and may have a syncopal episode.



This is also what happens to the military man at a parade, that falls unconscious after standing for a long, period without moving his feet. If he is left lying down for a while, he recuperates rapidly, because this improves the blood return from his extremities to the heart and to the brain. When we are sitting or standing for a long period it is helpful to move hands and feet, so that the muscles help the blood return and this is the reason why the calf muscles are called "the second heart". In some cases, even though rarely, the loss of consciousness is associated with seizures, looking like Epilepsy and the wrong diagnosis can be made.

As a consequence of Dyt these patients tire easily, feel sleepy and usually after mid-day they feel "like their batteries have become discharged" and have no energy. Due to the chronic fatigue, and episodic sensation of weakness is that in many cases the wrong diagnosis of Depression, Fibromyalgia, Chronic Fatigue, Hypothyroidism or Hypoglycemic crisis is made. Family and friends usually see them as being lazy and unsociable, since they lack the energy to participate in social meetings or to interact with other people. This happens in both sexes.

In some cases the cause of the Dyt is not known, but in most cases is due to a vasovagal neurological imbalance. Due to this, some patients have chronic low BP and low pulse (bradycardia). And can experiment Dyt crisis with strong emotions, high altitude, dehydration, acute anemia, severe pain, sight if blood, pregnancy or while in crowded environments, such as in church.

In the last few years I have become interested in the study of the Joint Hypermobility Syndrome (JHS), that is a genetic condition that exists in about 15% of the population worldwide, but appears to be more prevalent in the people from Spanish background. We have found that it affects 40% of the Chilean population. Is probably the most frequent cause of pain in the rheumatological practice, but usually goes undiagnosed. Some of these patients have very lax joints and are very agile or were agile in childhood and frequently sustained sprains (ankles) or sub-luxations. Others are not lax, but themselves or their relatives have fragile tissues and because of this, they can

have scoliosis, hip displacia, flat feet, back problems, hernias, prolapse, diverticulosis, cracking joints, early osteoarthritis, early osteoporosis, varicose veins in young people, etc.). Frequently they have lax, pale skin, with prominent veins, with hematomas due to capillary fragility. Less frequently they may have serious problems such as, aneurisms, arterial ruptures, expontaneous lung rupture (expontaneous pneumothorax), expontaneous abortions and bleeding tendency. The tissue fragility is secondary to the genetically altered collagen. Collagen is a protein, that forms the matrix of all tissues and I tell my patients “that it is like the iron in constructions”. Since this condition has Dominant Inheritance, 50% of the children will inherit it. We have found that 20 to 30% of these patients with JHS have Dyt.

Symptoms of Dysautonomia

The most frequent sign is chronic fatigue. Excessive tiredness usually appears after midday. If the person is standing for too long, without moving the extremities, starts to feel like his life is going away, his face looks pale or gray, may perspire and looks like he is having an hypoglycemic reaction (low blood sugar). If she/he does not sit or lie down can have a syncopal episode. At times the person does not feel well, may feel weak, tired, without energy, has no interest to speak with people around her and keeps herself in a mute status. She may look pale, tired, at times with droopy eyes and with no desire to participate in anything. At times due to the lack of facial expression, they are wrongly diagnosed as having Parkinson. They are usually mal interpreted as uncooperative and antisocial. It is necessary to recognize these premonitory symptoms to prevent falls and fractures or a cerebral concussion. Hands and feet may feel swollen if standing, walking slowly or when the weather is too hot. The fingers may feel tight, with some rigidity due to the swelling secondary to poor circulation. It is necessary to make a fist and move the fingers repeatedly to solve the problem. These people tend to have severe cold intolerance, needing to expose themselves to the sun “like lizards”. Sometimes they also have heat intolerance, in which case I tell them that they have a “bad thermostat”. They catch colds easily in cold weather. Some of them know that they have low BP, but no one has told them that they have D and that this is the reason of their poor quality of life. They feel very happy when finally a doctor tells them about this diagnosis.

Depressed people tend to have fatigue since early morning. Hypothyroidism can be a cause of chronic fatigue, especially in elderly people, and frequently also goes undiagnosed. These patients besides the fatigue and cold intolerance

may have dry skin, deep voice and are overweight. The diagnosis is confirmed with the finding of slow tendon reflexes on examination and elevated TSH and low Free T-4 on blood tests.

Causes that aggravate Dysautonomia

- Dehydration, due to: Excessive heat
Fever
Vomiting and diarrhea
Diuretics
- High altitude in cities like Mexico City and in mountain climbing. Also in the Russian Mountain at the amusing parks, due to sudden climbing and falling.
- Standing at church or in a line for too long or when getting up suddenly from bed or from a sitting position.
- Phobic reaction to close surroundings (Claustrophobia).
- The sight of blood, especially if from a relative or close friend.
- Frightening.
- Severe pain or pain associated with anxiety, such as when getting an injection.
- With a strong emotion or with nervousness, such as when taking an exam.
- Acute anemia.
- Walking slowly, like when walking in Malls or at the super market.
- With certain BP medicines that can produce orthostatic hypotension, as a secondary effect.
- Standing for a long period, without moving.
- After a big meal or alcohol in excess.
- Sexual relations.
- During menstrual periods.
- While coughing repeatedly or when making an effort to defecate when constipated (produces a vaso-vagal stimulation).
- During pregnancy.
- With a prolonged hot bath (bathtub, shower, sauna, jacuzzi) or with Bikram yoga, which is done at 42° C.

Note. In all these circumstances the problem results from the diminution of the venous return from the lower extremities, resulting in lack of oxygen to the brain, causing the Dyt symptoms. Thus is necessary to diagnose this

condition, prevent it and treat it adequately, with general measures and medications.

Consequences of Dysautonomia.

- Poor quality of life, due to the fact that the condition is not diagnosed and not treated.
- Tendency to falls, with contusions, injuries or fractures (these patients frequently have osteoporosis). They usually get dizzy when jumping out of bed or they may “see stars”.
- Dizziness, headaches, and nausea with altitude (Machu Picchu 2,350 m).
- Inability to stand without moving the extremities or standing in a social event or while on a line, because of the development of fatigue and tendency to syncopal episodes.
- Cold intolerance, at times severe and swelling of hands and feet, due to poor circulation.
- Tiredness, somnolence and headaches after sexual intercourse.
- Myocardial angina symptoms (chest pains) in people with coronary insufficiency, due to the drop in BP.
- Diagnostic confusion with: Chronic Fatigue Syndrome, Fibromyalgia, Depression, Hypoglycemic crisis and lack of interest to participate in social events.

¿ How to confirm the diagnosis ?

The diagnosis can be confirmed with a Tilt Test, which can be done in a Cardiology Unit. The patient lies in bed for 15 minutes, pulse and BP are taken frequently, and the bed is inclined to 80°. The person is tied to the bed, in a standing position, with the feet standing on a platform at the end of the bed, but cannot move them. The test may last one hour or less, if the BP falls substantially or if the person gets dizzy or has tendency to a syncopal episode, in which case test is positive.

Treatment of Dysautonomia

The treatment is symptomatic, since there is no curative treatment,. We have general measures and medications that are quite effective.

A.- General measures:

- In general avoid causes that can aggravate Dysautonomia (see above).
- Avoid standing for prolonged periods of time. If this can not be avoided, there are several movements that can help, such as crossing the legs; standing on tip toes and release; place one feet in front of the other and change; bend forward, like if going to tie your shoes; squat and/or place the foot over a chair, with the knee extended (see the attached pictures).
- Avoid walking slowly in a Mall or supermarket and do not spend more than an hour there and less if at all possible.
- When sitting in a bus or an airplane, it is necessary to move the knees and ankles frequently and to get up and walk. Occasionally adopt the position of hyperflexion of the chest to knees or head between the knees.
- After a big meal or heavy drinking it is necessary to lie down for 15 minutes or more. Do this also when noticing early signs of Dyt.
- We recommend drinking 2 to 3 liters of fluids a day to avoid dehydration. Remember that it is easy to become dehydrated with hot weather, vomiting or with diarrhea. Be careful with the use of diuretics (consult your physician).
- We recommend the use of elastic stockings (panties if possible) with a pressure at the ankle of at least 20 mm of Hg., to increase blood return from the lower extremities.
- Increase salt consumption, if you do not have high BP or kidney damage (consult your physician). This will increase your venous return and BP and thus will make you feel better.
- Moderate aerobic exercise is useful, since it raises the venous return to the heart by action of the muscles. Of special benefit are exercises trying to stay standing for longer periods of time, as well as exercises in the water.

B.- Medications.

Your physician may prescribe one or more of the following medications.

1.- Anti-depressants:

- a. Fluoxetine
- b. Sertraline
- c. Citalopram
- d. Escitalopram
- e. Paroxetine

2.- Fludrocortisone (Florinef)

3.- Etilephrine (Effortil)

4.- Beta-adrenergic blockers:

- a. Midodrine (Gutron)
- b. Metoprolol

5.- Vasoconstrictors, such as Amphetamines, but they have the problem of addiction.

In case of anemia it is necessary to correct it, because it aggravates Dyt.

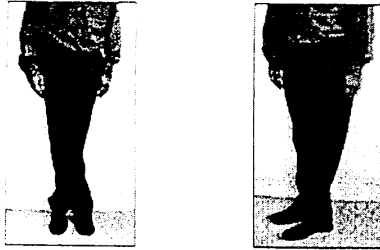
A pacemaker may be indicated in a few cases, to prevent syncopal episodes.

In summary. Dysautonomia is a relative frequent condition, generally associated to JHS, that causes lots of problems and poor quality of life to the patient and that usually goes undiagnosed. It can be treated symptomatically with good results. Only in cases in which the diagnosis is in doubt a Tilt Test is recommended.

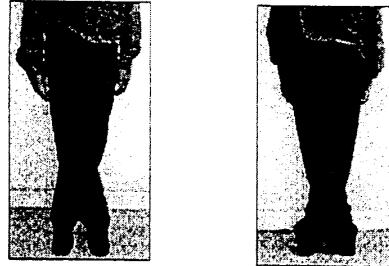
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Maneuvers to combat Dysautonomia

1.- Cross the legs in front of you



2. - Cross the legs behind you



3.- Squatting position



4.- Tying your shoes position



5.- Sitting position with forward bending or with the head between the knees



6.- Straight leg over a chair.



Note: *Reproduced with the authorization of Prof. Mariano Rocabado, director of the Kinesiology department at Integra Médica.*