Autoimmune Inner Ear Disease (AIED) and Treatment Protocol

Autoimmune Inner Ear (AIED) is a relatively new (circa 1958) hearing disorder diagnosis affecting between 5 and 20 people in a population of 100,000.

AIED becomes suspect in the presence sudden and/or rapid onset of unexplained hearing loss in patients between the ages of 20 to 50 years of age. Vertigo may also accompany the loss. Interestingly, AIED is but one of many potential underlying suspects considered in the wake of rapid hearing loss. Syphilis, Multiple Sclerosis, and AIDS also become suspect and must be ruled out as a contributor to symptoms. The experts tell us that autoimmune disease in general is an organ specific disease.

The human inner ear is largely inaccessible to research. Resultantly, most of what we know today about the physiology of the inner ear is mostly theory and based on animal studies. Likewise, the premise of AIED is also theory.

Much is known however about autoimmune disorders in general. A brief understanding of autoimmune physiology is helpful.

The human body recognizes invaders to the body. Invaders, or *antigens*, elicit antibodies to attack the antigen and kill it. Some antigens survive the antibody attack only to be met by secondary defenses called “B” and “T” lymphocytes. “B” and “T” cells are smart cells. They have the ability to recognize antigens they have previously encountered. Resultantly, subsequent “like” antigen encounters are met with quick response. Lastly and notably, normal functioning “B” and “T” lymphocytes are impervious to the body’s self antigens. “B” and “T” cells are produced in the bone marrow and end up in the blood stream. When a “B” cell circulates the body and locates an antigen, it multiplies and releases antibodies that attach to the antigen. The antigen is then disposed of via the immune system. The “T” cell does not produce antibodies. When it locates an antigen, it kills the antigen via direct contact with the antigen.

In the course of normal events, “B” and “T” lymphocytes are naturally eliminated from the body chemically. However, some “B” and “T” lymphocytes manage to avoid elimination and remain at rest in the body’s lymphatic system. Meanwhile, these harbored cells are thought to loose their tolerance to antigens created in the body. As result, mass numbers of *autoantibodies* are created establishing a state of autoimmunity. Possible triggers to the creation of autoantibodies are theorized to be a response to tissue damage or a modification of antigens caused by drugs or viruses.

The onset AIED is theorized to occur in one or combination of three ways:

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1. AIED may originate within the inner ear.
2. AIED may originate outside the inner ear and gain access to the inner ear via normal and/or abnormal inner ear orifices.
3. AIED may result when the inner ear is ‘caught in the middle” of an immune response battle originating from other parts of the body.

AIED is separated and diagnosed as other than run of the mill sensorineural hearing loss when Immunosuppressant drugs (usually steroids) improving hearing threshold levels at best by 30 dB.

Steroids interrupt the abnormal immune response of autoantibody production associated with disease. The down side of steroid drug therapy is that excess steroidal use interrupts normal immune function. The physician is tasked to prescribe a balance of drug therapy that suppresses autoantibodies while at the same time allowing normal immune function.

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