

# Drastic Measures for Aggressive MS

By Ashton Embry

The average age of persons diagnosed with multiple sclerosis is about 30 and most begin with the relapsing-remitting phase of the disease. In the relapsing-remitting phase, persons with MS often experience about one attack per year. Such attacks are associated with a significant increase in one or more symptoms which cause one or more impairments. For many the symptoms slowly resolve and the person returns to their previous state or to a slightly worse one. Overall, the accumulation of disability is very slow and for some is minor. About half of those with R-R MS eventually enter the secondary progressive phase of MS after about 15-20 years in the R-R phase.

Of course anyone diagnosed with MS wants to avoid the disease path described above and to basically halt progression when they have little to no disability. The current first-line drugs (Interferons, Copaxone) can perhaps increase the time between diagnosis and entering the SPMS phase but there is little evidence that the drugs halt the disease progression for most or even substantially change the final outcome. They simply delay the arrival of severe disability which is a plus. Many with MS use a drug and hope (gamble) that they are one of the lucky ones who do not end up with severe disability by their 60s.

Of course there are many people who are diagnosed and who take a much more proactive approach than simply taking a drug prescribed by their neurologist and hoping they get lucky. There are a number of complementary and alternative methods for treating MS and many of these are described and discussed on innumerable websites and in *New Pathways*. The seemingly most effective, non-drug therapy on the basis of the available scientific data and anecdotal accounts is the adoption of various nutritional strategies which are lumped together as the Best Bet Diet (<http://www.ms-diet.org>). For many a strict adherence to the BBD is enough to completely halt disease progression. Others have had success with a combination of the BBD and one of the first-line drugs. To me it has always made sense to first use the BBD as soon as possible following diagnosis and then to add a drug only if the BBD does not keep MS well controlled (no increase in disability score).

Unfortunately for some, neither the BBD nor a combination of the BBD plus a drug keeps MS well controlled. To me this signals that the person has an aggressive case of MS and that they are at very high risk for progressing to severe disability over a relatively short time period. People with aggressive MS can have 6 or more attacks a year. So the big question is “What should a person do if the BBD and a first-line drug do not keep MS well controlled and they continue to experience frequent attacks and increased disability?”.

To answer this, it is important to understand why a person would experience such an aggressive and relentless form of MS. As I have discussed in previous columns, MS is caused by the activation of myelin-sensitive immune cells and a failure of the regulatory side of the immune system to quickly and effectively suppress the immune attack on myelin in the central nervous system. For those who do not respond to the BBD and drug regimen, it would seem that their immune systems are very far out of equilibrium. For example a person's regulatory side may be so weak or their attack side so strong that the BBD with the help of a drug cannot push their immune system back to equilibrium where the regulatory side keeps the attack side well controlled.

To me when a person is afflicted with such an aggressive form of MS, it is time for drastic action and the sooner the better. Drastic action means major medical intervention which halts the unrelenting attack of the immune system on the person's CNS. To accomplish this, the pathogenic elements of the person's immune system have to be nearly or completely wiped out. Neurologists are slowly coming to this realization but have always been reluctant to act until a person already has very substantial disability and is wheelchair-bound. To me this is much too late.

There are a number of drug therapies which I would classify as drastic action. Three of them involve the use of drugs developed to treat cancer and they are used to wipe out much of the immune system. These include the drugs Campath 1-H, Cyclophosphamide and Mitoxantrone. The long term use of such drugs puts the person at risk for major infections, including the one that killed patients in the Tysabri trial, and for cancer as well as for other serious side effects such as cardiac problems with Mitoxantrone. I don't think this is the best way to go.

On the other side of the spectrum is a stem cell transplant which is a rather common therapy for leukemia (cancer of the immune system). This involves a complete destruction of the person's immune system through chemotherapy and radiation and the regrowth of a new one from stem cells. Recently two people with aggressive R-R MS were given a stem cell transplant and two years later both had substantially less disability and no evidence of any disease activity. There is no doubt a stem cell transplant carries some risk but to me it is worth considering if one is experiencing an aggressive form of MS.

An even better therapy may be available for aggressive MS. Last year the results were published on an open trial in which 27 persons with uncontrollable, R-R MS were given five pulses of Mitoxantrone, a major immune suppressant, over 8 months with Copaxone introduced after the third pulse. All 27 participants have either substantially improved or remained stable over time periods up to 5 years.

So why is this treatment apparently so effective? To me the key is the regrowth of the immune system in an environment of Copaxone which is a mixture of amino acids which mimic parts of myelin protein. It is likely that as the immune system regenerates it becomes tolerant to the widely present Copaxone amino acids and thus becomes tolerant of parts of look-alike myelin proteins that are normally attacked in MS. Notably, this therapy carries less risks than a stem cell transplant and may well be more effective given the myelin tolerance aspect of the regenerated immune system.

So in answer to the question of what to do when one has an aggressive form of MS that cannot be controlled by standard drug and nutritional therapies, I would say ask your neurologist to consider the use of the combination Mitoxantrone/Copaxone therapy. I would further suggest that it be combined with the BBD to increase the chances of keeping the MS disease activity well controlled.