



## MGUS

The immune system consists of a number of lymphoid organs, including the thymus gland in your chest cavity, lymph nodes, spleen, tonsils,

aggregates of lymphoid tissue in the gastrointestinal tract and epithelial tissue of our body, the bone marrow, and a variety of individual cells traveling in the blood.

The majority of these cells are called lymphocytes, and are divided into T and B cell lymphocytes. The B cell lymphocytes have a great deal to do with cellular immunity, and would be active in rejection of a transplant. The B cells act primarily to fight off infection from bacteria and viruses. Under the influence of antigenic stimulation, B cells can become plasma cells which produce antibody towards the specific antigen that caused its transformation.

The plasma cells can undergo malignant degeneration, resulting in various types of malignancies referred to as plasma cell dyscrasias. Multiple myeloma is one of the plasma cell dyscrasias, but it is quite uncommon. It is characterized by an accumulation of plasma cells in the bone marrow and the soft tissue and organs. These plasma cells produce an increased amount of a specific antibody, referred to as a monoclonal immunoglobulin. Myeloma is a very devastating disease, and depending on the stage, has a median survival of only 18 months up to 5 years. In rare cases it may be cured by a bone marrow transplant. There are various newer treatments that can slow down the progression of the disease, but it still has a very poor prognosis.

The most common type of the plasma cells dyscrasias is the monoclonal gammopathy of undetermined significance (MGUS). This is of interest because it is found as a normal variant increasing in prevalence as a person ages. It is found in 1% of the general population, 3% of healthy persons older than age 70, and up to 7% prevalence in those 85 years of age and

older. MGUS looks something like myeloma, in that there is a monoclonal protein but at a lower concentration. It is often discovered on routine blood tests performed as part of a general check-up. If discovered, a complete work up has to be done to rule out myeloma, since MGUS is a diagnosis of exclusion.

However, MGUS is not entirely a benign disease. In some cases there is a deterioration of this condition, eventually resulting in myeloma or some other type of leukemia. Approximately 25% will develop myeloma, amyloid, or some other type of lymphoid cancer within 10 – 20 years. Overall, the rate of progression to myeloma is about 1% per year.

It is difficult to predict which individuals with MGUS will develop myeloma. Only two factors have been identified that predict increased risk of progression, that of a serum monoclonal protein concentration greater than 1.5g/dl or a monoclonal immunoglobulin other than IgG. Because it is difficult to predict who will develop myeloma, this presents a problem in the underwriting process. The age of the individual applying for insurance is important. Since the prevalence of MGUS increases with age, 50% of the individuals with this will die of some other cause while they still maintain their MGUS status. The younger the age of the applicant with MGUS, the greater would be our concern. Also of importance is the time since the MGUS was diagnosed. If it has been a short period of time, this is also of concern. Lastly, the level and type of the monoclonal protein needs to be determined. This means that attending physicians records need to be complete so that the underwriter can have a complete understanding of the MGUS process.

In summary, it is not unusual for an underwriter to see an individual who has MGUS, especially in the older population. These individuals can be insurable, but it does depend upon their age, the time they have had the disease, and whether or not a complete evaluation has been performed. In the majority of instances, a rating would be necessary but they would be insurable.

As usual, I would be happy to answer any questions regarding this topic. Also, please feel free to suggest other topics for future articles in FYI.