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B12 for the Brain

Vitamin B12 deficiency is often undiagnosed. It may manifest itself as neurological, hematologic or other systemic disorders that are difficult to identify. Anemias with large red cells (megaloblastic), can often be linked to lack of B12, but if iron is also deficient, the B12 deficiency may be missed. Neurological symptoms, such as leg weakness, depression, gait disorders, excessive sleepiness, confusion and delirium, may be attributed to "aging" or some other cause.

The myelin that surrounds the many of the neurons of the nervous system is dependent on vitamin B12 for its formation. If B12 levels are low, the myelin sheath cannot form properly. Without myelin, impulses travel much more slowly along the nerve cells. Confusion mirroring dementia may occur. If B12 treatment is not started within six months, nerve damage and dementia may be permanent.

B12 deficiency has many causes. Gastric acid is required to separate B12 from the animal protein in our diets. Drugs which reduce the acid production by the stomach, such as Losec®, Pantoloc® and ranitidine prevent this. Metformin is renowned for causing B12 deficiency. Anticholinergics, narcotics and conditions which slow gastric contractions allow bacteria to consume B12 in the gut before it can be absorbed in the distal portion of the small intestine. Inflammatory bowel and celiac diseases also affect the absorption site for B12. Those on vegan diets have inadequate B12 intake. All residents with the conditions or drugs listed above should be considered for additional B12.

Foods are not supplemented with B12 in Canada, so Health Canada recommends adding B12 for all adults >50. The elderly may need at least 500 mcg/day by mouth. Injectable B12 is typically given as 1 mg i.m. monthly after an intensive loading dose regimen. Those lacking Intrinsic Factor (a stomach protein required for B12 absorption) may need more frequent injections, as they are less able to retain B12. Serum B12 levels don't always tell the truth about total body levels. Treatment must be based on risk and clinical symptoms. Delays can have very serious consequences.

Zithromax for COPD

Residents with severe chronic obstructive pulmonary disease (COPD) may experience frequent exacerbations requiring antibiotic therapy. Several studies have examined the use of prophylactic antibiotics, with the hope that they will reduce the frequency or severity of these flare-ups.

One such study was presented at an *American Thoracic Society* meeting in May. The 1,142 study participants were all current or ex-smokers who required supplemental oxygen. They had severe COPD and had suffered at least one exacerbation in the prior year.

Zithromax® (azithromycin) 250 mg was given once daily to the treatment group and they experienced 19% fewer acute episodes. The time to the first exacerbation was significantly delayed and the number of hospitalizations was decreased.

There were more resistant organisms in the treatment group, but none were associated with pneumonia. Hearing loss was slightly more frequent in the treatment group, although it often corrected itself. Hearing also returned to normal if the antibiotic was stopped. GI adverse effects were the same in the two groups.

Past COPD guidelines have recommended avoiding prophylaxis. In light of studies such as this, it may be time to consider prophylaxis in residents with severe disease.

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Prepared by Randy Goodman
Certified Geriatric Pharmacist