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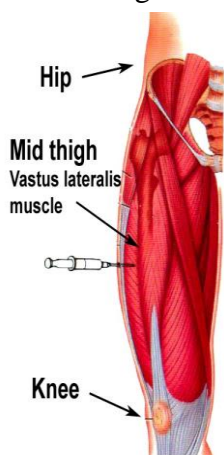
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Big Volume for Big Muscle

A huge shoutout to Morgan for schooling this pharmacist on i.m. injection technique. For many years I have told the world that i.m. injections must be maxed out at 2ml. As a result, we have directed nurses to split high-volume injections such as ceftriaxone (2.9ml for a 1 Gm dose) and furosemide (40mg = 4ml) between two sites. The extra poke is clearly undesirable, and RPN Morgan chastised me (nicely) for making this recommendation.

I was advised that while it is true that the deltoid muscle can only accommodate a 2ml volume, the vastus lateralis (side of the thigh for those like me who were not in the know) can hold up to 5ml! Naturally, I was gobsmacked upon

hearing this. Please be advised that we have revised our default labeling for ceftriaxone to reflect this change. I will add the proviso that large-



volume single-site injections are not appropriate for all. Very frail residents with little muscle mass may still require split-site injections. Please use professional judgment in these situations. Thanks, Morgan!

Vitamins and Memory

A study published in the *American Journal of Clinical Nutrition* showed a multivitamin-mineral supplement (Centrum Silver) provided memory benefits in older adults. The study of 3500 subjects was randomized and placebo controlled. The immediate recall of a list of 20 words was significantly improved in the vitamin group at the one and three-year marks. Patients with cardiovascular disease showed the greatest benefit.

The authors concluded that word recall improved by the equivalent of 3.1 age-related years. They also speculated that the benefit was not product specific, therefore government stock vitamin-mineral supplements should provide similar benefits. Interestingly, mega-doses of vitamins have not shown these benefits and can be associated with toxicity.

ASA and Anemia

ASA is popular stuff. A check of our database reveals that 22% of our LTC and retirement home population is taking this drug. ASA was produced by Bayer back in

1897 and marketed shortly thereafter as an analgesic. We are all familiar with it as an OTC drug, but it would certainly be an Rx med if it were released today.

ASA is used for secondary prevention in individuals with coronary and peripheral artery disease, TIAs, diabetes, and other CV etiologies. However, its use in primary CV prevention is controversial, especially in those 60 years of age and older. Bleeding risk appears to outweigh the beneficial effects when there is no compelling CV diagnosis.

The latest relevant study, *Aspirin in Reducing Events in the Elderly (ASPREE)*, was designed to show whether ASA could prevent dementia and other major disorders such as cancer, stroke, and depression. It was a primary prevention trial and the results were published in the *Annals of Internal Medicine*.

Nearly 20,000 adults 65 years and older were assigned to take either 100mg of EC-ASA or a placebo. After 4.5 years it was decided that the listed benefits were unlikely to occur, and the study was terminated. Anemia occurred 20% more often in the ASA arm, even when bleeding was not identified. Lower ferritin levels were also suggestive of iron-deficiency anemia. Use ASA with caution and watch hemoglobin closely.

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