## 2019 IVC, HDIVC, Antioxidants and Chemotherapy, Radiation Update

For whatever reasons this gem of an old paper is making a resurgence at many oncologists offices and being used as a justification to not start IVC, HDIVC etc. In short (abridged below) it says:

Heaney ML, Gardner JR, Karasavvas N, Golde DW, Scheinberg DA, Smith EA, O'Connor OA. Vitamin C antagonizes the cytotoxic effects of antineoplastic drugs. Cancer Res. 2008 Oct 1;68(19):8031-8. doi: 10.1158/0008-5472.CAN-08-1490. PMID: 18829561

Abstract: Vitamin C is an antioxidant vitamin that has been hypothesized to antagonize the effects of reactive oxygen species-generating antineoplastic drugs. -- TRUNCATED -- These findings indicate that vitamin C given before mechanistically dissimilar antineoplastic agents antagonizes therapeutic efficacy in a model of human hematopoietic cancers by preserving mitochondrial membrane potential. These results support the hypothesis that vitamin C supplementation during cancer treatment may detrimentally affect therapeutic response.

Comment: (A) it's 2008 and much is published in opposition since then, see below. (B) It used dehydroascorbate (DHA) which isn't really analogous to the effects of a post infusion low or high dose IVC and (C) it is a cell line study.

## **Chemotherapy:**

Below are a few recent links which are not only more relevant but essentially make this old paper a non-issue for patients:

https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6117840/ (2019 Positive)

https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6071214/ (2018 Positive)

https://www.frontiersin.org/articles/10.3389/fphys.2018.01182/full (2018 Positive)

https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6115501/ (2018 Positive - see "Q4")

https://www.consultdranderson.com/antioxidants-in-oncology/ (2015 Review Positive)

https://stm.sciencemag.org/content/6/222/222ra18? wptouch preview theme=enabled (2014 Positive)

## **Radiation:**

https://cancerres.aacrjournals.org/content/early/2018/09/25/0008-5472.CAN-18-1680 (2018 Positive)

https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6115501/ (2018 Positive - see "Q4")

There are more but this group is recent, peer reviewed and supportive.