New Vaccine for Shingles: Is Prevention Really Better than Treatment?

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Chicken pox, also known as varicella, is a common viral childhood disease typically identified by its characteristic rash. Herpes zoster (shingles) results from a reactivation of the varicella-zoster virus already lying dormant in the body. It also has a characteristic rash that overlies the distribution of an affected nerve. Typically, herpes zoster is an exceptionally painful condition.[1] Pain is often severe enough for opiates to be used for control. Antiviral drugs such as famciclovir are used with mixed results. The current Merck vaccine for varicella does not prevent shingles[2]—in fact, it has been blamed for a doubling of the overall incidence of shingles to 525/100,000.[3]

A shingles vaccine from Oka/Merck was the subject of a placebo-controlled trial on 38,546 subjects who had a history of varicella or had probably been exposed to chicken pox as a result of residing in the United States for at least 30 years. Half received the vaccine, and all were observed for shingles for a median time of 3.12 years. The vaccine reduced the "burden of illness" of shingles by 61%. Actual numbers of shingles cases were 315 (1.6%) for the treatment group and 642 (3.3%) for the placebo group. In the results section of the abstract, the only description of the side effects of the vaccine was: "Reactions at the injection site were more frequent among vaccine recipients but were generally mild."[2] In an appearance on the PBS News Hour, the head author, M. N. Oxman, M.D., left no doubt that he believed this to be a great vaccine.

A more careful look gives cause for skepticism. The number needed to treat (NNT) is 59. If the total cost of each injection is $100, the cost to prevent one case of shingles would be $5,900. The absolute risk of shingles dropped by 1.7%. Mortality was unchanged at 4.1% of subjects, who had a median age of 69 at the beginning of the study. An adverse effects substudy was carried out on one-sixth of the subjects for just 42 days after injection. Extrapolating the results to 19,273 subjects in the whole treatment group, this group had 132 more cases (0.7%) of one or more serious adverse events, and 4,677 more cases (24%) of one or more adverse events than the placebo group.[2]

In order to judge the value of a preventive vaccine, studies need to be done to compare the benefits, cost, and side effects of vaccine with symptomatic treatments. Other than the mere mention of antiviral drugs, this comparison was not seen.[2] This type of omission in past clinical submissions to the FDA has been noted, at least in failure to compare older drugs or supplements with a newer drug.[4]

Yet as early as 1943, I. Dainow reported success in 14 of 14 cases of shingles with intravenous "vitamin C."[1] In 1950 Mohammed Zureick, M.D., reported that 327 cases of shingles were treated with intravenous "vitamin C" with resolution of all symptoms and signs in three days in all cases.[5] Both the dose and the dosage form were poorly described; usually, sodium ascorbate is given intravenously rather than ascorbic acid.[1]

Between 1949 and 1974, Frederick R. Klenner, M.D., reported that seven of eight adults with shingles who were treated with 2-3 g of "vitamin C" intravenously every 12 hours simultaneously with 1 g orally every two hours were free of pain within two hours of the first injection. He stated that early discontinuation of "vitamin C" would allow recurrence, but longer administration of this regimen (for 72 hours) would "cure" the shingles.[1,6] The study was very small, but the reported success rate was quite high and deserving of further investigation. In particular, the occurrence of postherpetic neuralgia should be monitored.

In 2004 Padayatty et al. verified that intravenous "vitamin C" could produce a plasma concentration 6.6 times as high as oral administration, and called for trials with intravenous administration.[7] Much of the controversy over the benefits of vitamin C for several illnesses exists because of the difference in its effects depending on the route of administration as well as the dose.[1]

If the early reports are genuine, they could be validated in a small trial. If 87-100% of patients have their symptoms resolve completely after intravenous sodium ascorbate, the NNT would be only 1.1.

Since intravenous sodium ascorbate is known to be quite safe,[8] treating only those patients who develop clinical manifestations of shingles would seem a far better approach, both medically and financially, than mass vaccination with a large number of adverse effects, if this treatment is indeed as effective as has been stated.

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