

TEMPOL-H for Fibrocystic Breast Disease-- Case Report.

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ABSTRACT Variably presenting with painful cysts and mastodynia, fibrocystic disease of breast (FD) affects 30-40% of women. FD complicates breast cancer diagnosis by requiring work-up of lumps to rule-out malignancy and by obscuring malignant lesions. Although a nominally-benign hyperproliferative disorder, FD sometimes presages cancer. Treatment is primarily palliative, with mastectomy sometimes indicated. TEMPOL is a nitroxide spin-label with SOD-mimetic action. A powerful antioxidant currently in human trials, it shows very low toxicity, even extending life-span in animal models. The reduced derivative, TEMPOL-H, may be the primary circulating form.

Treatment: In a last-ditch effort to avoid bilateral mastectomy, a 48 y/o 50 kg woman with long-standing serious and unremitting fibrocystic disease of breast was treated PO with a solution of 2% TEMPOL in 20% ascorbic acid (to produce TEMPOL-H ex-vivo).^{*} Starting dose was 10 mg TEMPOL equivalent/day. Because of a family history of breast ca, pt was already closely-followed with serial mammography, etc.. at a local hospital (add note: MD Anderson).

Results: Within 1-2 weeks there was significant symptomatic relief and regression of palpable cysts. Subsequent mammography and ultrasonography confirmed cyst regression. Previous microcalcifications are no longer reported. Upon stopping treatment, FD recurred, but repeatedly regressed upon restarting treatment. No side-effects were seen. Mastectomy is now shelved. These results imply a role for oxidative stress and/or redox-signaling in fibrocystic disease and point to future treatment.

^{*}Informed consent, workup, etc. in compliance with TX admin. code 200.1-.3. One or both authors have certain intellectual property claims to TEMPOL and related compounds.

Addendum: TEMPOL represses a BRCA1 repressor, CtBP1. It also has effects on p53, PARP, etc.

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