

Histamine Phosphate Injections in the Treatment of Ménière's Disease

Eric F. Succar MD, J. Scott Greene MD, Kurren Gill BS, W. James Azeredo MD
Geisinger Medical Center, Danville PA

ABSTRACT

Outcome Objectives:

1. Describe the use of subcutaneous histamine phosphate injections (HT) in patients with Meniere's Disease (MD) who failed first line therapy consisting of a low salt diet and diuretics.
2. Analyze the outcomes of patients with MD treated with HT.

Methods:

A retrospective chart review of 123 patients, age >18, with the diagnosis of MD treated at a tertiary medical center with HT from 2003 to 2015. Inclusion criteria included 1) definite MD, according to the 1995 AAO-HNS guidelines and 2) failed a low-salt diet and diuretics. In total, 42 patients met inclusion criteria. The main outcome measured was the percentage of patients treated with HT that did not go on to require further, more invasive treatment.

Results:

Forty-two patients with MD treated with HT were included. Twenty-three patients (55%) were female and nineteen (45%) were male. Twenty-eight of 42 patients (67%) experienced symptomatic improvement with HT and did not require further treatment. Fourteen of 42 patients (33%) required further therapy after the use of HT. Of these 14 patients, two required surgical intervention, nine required intratympanic gentamicin, two required intratympanic steroid injections, and one discontinued HT due to lack of efficacy.

Conclusion:

The majority of patients (67%) with MD who were treated with HT after failing first line therapy experienced significant symptomatic relief with minimal side effects and did not wish to pursue further treatment. These results support the conclusion that HT is a low risk treatment that may benefit patients with MD who failed first line therapy.

CONTACT

Eric F. Succar, MD
Geisinger Medical Center
Email: efsuccar@geisinger.edu
Phone: (248) 756 - 6161

INTRODUCTION

Ménière's Disease (MD) is the second most common vestibular cause of vertigo with an estimated prevalence in the United States of 190 per 100,000. Despite its prevalence, there is a lack of definitive evidence regarding its pathophysiology, etiology and treatment.

There is no known cure of MD. Available treatments are categorized into abortive, non-ablative, and ablative. The goal of non-ablative therapy is to reduce the severity and frequency of vertigo attacks while preserving hearing and vestibular function. The ideal non-ablative therapy has yet to be developed and a consensus on which therapy provides superior benefit has yet to be determined.

A low-salt diet in conjunction with a diuretic is used as the first line non-ablative therapy in the United States, while a low salt diet in conjunction with a histamine analogue is the preferred treatment in Canada and Europe. According to Cochrane reviews, insufficient evidence exists to support the benefit of diuretics and histamine analogues in the treatment of MD. Despite a lack of high-quality evidence, both medications continue to be used because of insignificant risks and significant potential benefits.

Recent literature on histamine analogues for MD evaluate its use as a first line treatment. In this study, we review the use of histamine phosphate injections as a second line therapy in patients who have failed low salt diets and diuretics.

METHODS AND MATERIALS

One hundred and twenty-three patient charts were reviewed retrospectively. Charts were selected based on the following criteria 1) greater than 18 years of age 2) patient established care in the Geisinger Department of Otolaryngology between January 2003 and January 2015 3) CPT diagnosis of MD and 4) presence of histamine phosphate injection on medication list.

Collected data included 1) age, 2) sex, 3) presence of at least two episodes of rotary vertigo lasting greater than 20 minutes, 4) symptoms of aural fullness, tinnitus, and nausea, 5) affected ear, 6) audiograms, 7) previous treatment with low salt diet and diuretics, 8) duration of treatment, and 9) final treatment.

Of the one hundred and twenty-three charts reviewed, 42 met inclusion criteria. These criteria were 1) definite MD according to the 1995 AAO-HNS guidelines, and 2) failed previous first line treatment with a diuretics and low salt diet. The main outcome measured was if the patient required further more invasive therapy.

RESULTS

All patients meeting inclusion criteria had audiograms available for review. Twenty patients had right-sided disease (48%), eighteen had left sided disease (43%), and four had bilateral disease (9%).

Side effects were rare with only one patient reporting a significant rash (2%). There were no other complications of therapy.

Twenty-eight patients (67%) experienced symptomatic improvement and did not require more invasive therapies. All of these patients underwent therapy for a minimum of nine months with the average duration of treatment being forty-five months.

Fourteen patients (33%) either went on to require more invasive therapies or discontinued histamine phosphate injections due to lack of benefit. Ten patients (24%) were treated with an ablative therapy; three patients (7%) were treated with an invasive non-ablative therapy; one patient (2%) discontinued the medication due to lack of benefit.

Of the 14 patients who failed treatment, seven (50%) failed within one month, one (7%) failed within one to six months, four (29%) failed within six months to one year, one (7%) failed within one to five years, and one (7%) failed after five years.

Table 1. Final therapy administered to the 42 included patients.

Final Therapy Administered	
Histamine Phosphate Injections	28
Intratympanic Gentamycin	9
Intratympanic Steroid	2
Labyrinthectomy	1
Endolymphatic Sac Decompression	1
Discontinued Medication	1

Histamine Phosphate Injection Therapy for Ménière's Disease

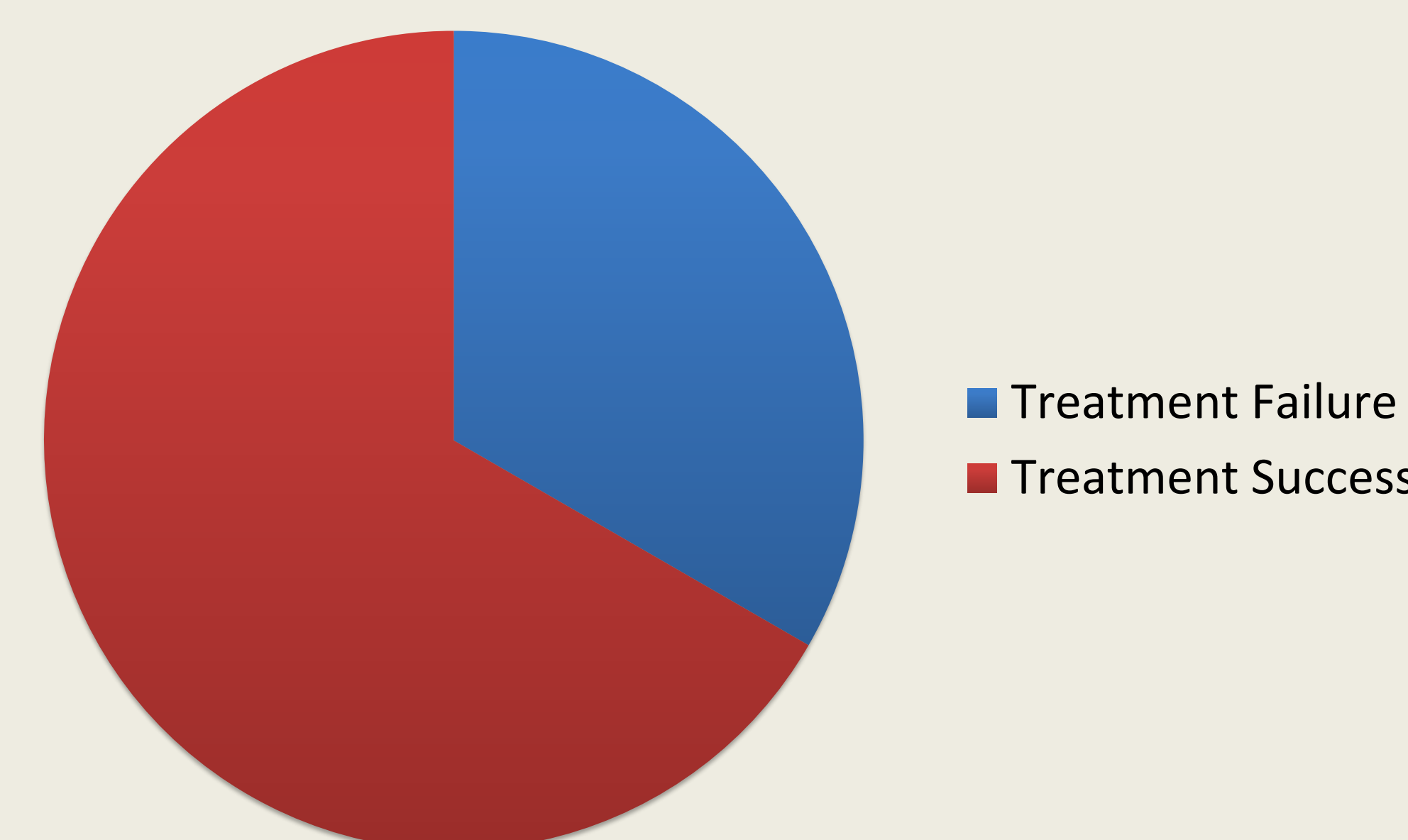


Chart 1. Main Outcome.

DISCUSSION

Low salt diet, diuretics, and histamine analogues represent different types of available non-ablative therapies for MD. Response to these therapies is unpredictable and variable. Definitive research has yet to establish which is superior. The variability in response among patients and the unique mechanisms of action of these therapies support the multifactorial nature of MD.

The goal of this study was to determine if histamine analogues could play a role in the treatment of MD in the United States, where low salt diet and diuretics are the established first line treatment. Histamine phosphate injections were used at our institution as a second line treatment in patients wishing to avoid more invasive therapies.

Our results showed a potential positive benefit of histamine analogues in patients with definite MD refractory to diuretics and low salt diet. The majority of patients (67%) experienced sufficient symptom relief that they could avoid further treatment. All patients who responded to histamine phosphate injections remained on the therapy for a minimum of nine months and with an average duration of treatment of forty-five months. These results support our hypothesis that histamine analogues may be an effective secondary treatment option in patients with refractory MD who wish to avoid further more invasive therapies.

CONCLUSIONS

Many non-ablative therapies for MD exist, each with a unique proposed site of action. While reports of success exist for each treatment type, no definitive evidence exists at this time that confirms one's efficacy or superiority. Low salt diets and diuretics are the established first line non-ablative treatment in the United States. Our reported success using histamine phosphate injections as a second line treatment shows that it should be in the armamentarium of physicians who treat MD as a low risk treatment option that may enable many patients to avoid more invasive treatments.

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