

CASE REPORT

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Effect of Myrtle Syrup on Refractory Pediatric Gastroesophageal Reflux in an Eight-Year-Old Boy: A Case Report

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ABSTRACT

Background: Gastroesophageal reflux (GER) is the most common disorder of childhood. GER can continue to older ages, reducing quality of life. Unfortunately, therapeutic interventions treatments are not always successful. It is the first report of pediatric GERD treatment in Iranian Traditional Medicine (ITM).

Case Presentation: An 8-year-old boy with recurrent GER and chronic abdominal pain was referred to a Traditional Medicine clinic. The child had suffered from severe irritability and recurrent regurgitation since infancy. Endoscopy was performed in the second year of life and severe esophagitis found. He was treated with oral omeprazole (1 mg/kg/day divided in 2 doses). After a month, abdominal pain and irritability continued. His problems remained until the age of five despite use of medication. Gastrointestinal bleeding (GIB) occurred in December 2013. In that month he was hospitalized twice times. In February 2014, he was admitted to the clinic of traditional medicine, due to poor feeding and abdominal pain. He was diagnosed with GER and stomach weakness. Myrtus communis (Myrtle) syrup 2.5 cc three times daily and quince jam for breakfast were prescribed. Abdominal pain improved after two months of treatment and within 2 years of follow-up his general condition was excellent. During this time there were no signs or symptoms of reflux recurrence.

Conclusion: Myrtle is useful in reducing edema, and strengthening the stomach and gastrointestinal tract. The effect of "quince" in the treatment of GERD is similar to omeprazole, while it also has other properties such as strengthening the LES. These fruits overcome the most common mechanisms of GER and have a direct role in the patient's improvement.

Keywords: Pediatric Gastroesophageal reflux, Myrtus communis, Iranian Traditional Medicine

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Introduction

Pediatric Gastroesophageal reflux (GER) is a physiologically normal finding, which can be frequently seen in normal infants and most often does not require treatment unless it is complicated. GER is the most common disorder of childhood (1), with about half of the children below 4 months of age experiencing regurgitation at least once per day (2). When GER leads to complications including esophagitis or weight loss, it is considered as gastroesophageal reflux disease (GERD) which can continue to older ages, reducing quality of life (3). Therapeutic interventions of GER include non-pharmacological lifestyle modifications and the use of medical treatment in severe cases (4, 5). Unfortunately, these treatments are not always successful.

According to our search in literature and Iranian Traditional Medicine (ITM), no article was found about refractory GERD. Therefore, this is the first report of pediatric GERD treatment in ITM.

Case description

An 8-year-old boy with recurrent gastroesophageal reflux disease and chronic abdominal pain was admitted twice at a children's hospital. In the end he was referred to a Traditional Medicine clinic. He is a first child from consanguineous parents, delivered with cesarean section with a birth weight of 3200 gr. The child suffered from severe irritability and recurrent regurgitation since infancy. Endoscopy was performed in the second year of life and severe esophagitis found. He was treated with oral omeprazole (1 mg/kg/day divided in 2 doses) and lifestyle modifications. During the first month

after initiation of treatment, improvement was good but later on, abdominal pain and irritability continued. Morning halitosis, abdominal pain especially post feeding, heartburn, and consequently anorexia were gradually added to his symptoms. He had anorexia secondary to abdominal pain. His problems remained until age the age of five despite use of medication. Gastrointestinal bleeding (GIB) occurred after administration of ibuprofen in December 2013. At that time, he was hospitalized and received appropriate treatment. After stabilization of the child's vital signs, upper GI endoscopy was performed showing a grade I esophagitis and prolapse gastropathy. The pathology report revealed mild chronic gastritis without H.pylori infection. After 5 days of treatment with parenteral pantoprazole, he was discharged with a relatively good general condition. Treatment was continued after discharge, with omeprazole, domperidone, and ferrous sulfate. He was readmitted due to severe abdominal pain and poor feeding the next day. This time Nexium (Esomeprazole) was indicated. In February 2014, he was admitted to the clinic of traditional medicine, due to poor feeding and abdominal pain. He was diagnosed with GER and stomach weakness. Myrtle syrup 2.5 cc three times daily (after each meal) and quince jam for breakfast were prescribed.

Results

Abdominal pain improved after two months of treatment and his general condition was excellent within 2 years of follow-up. During this time, there were no signs or symptoms of reflux recurrence. He had no complaint of abdominal pain. No complications or side effects of the drugs were noted. Treatment continued for 2 years.

Discussion

Drug therapy including PPIs is used for complicated cases of pediatric reflux (GER) when weight loss, refusal of feeding and esophagitis are present (4, 6, 7). PPIs reduce secretion of gastric acid, but have no effect on relaxation of LES (8). On the other hand, it has been demonstrated that the majority of pediatric GER has a non-acidic component (9), therefore, the use of drugs that affect the transient LES relaxation (TLESR) can be useful (10).

Different factors are discussed in pathophysiology of reflux, including esophageal mucosal hypersensitivity, decreased resistance of esophageal mucosa, reduced tonicity of LES, oxidant agents and inflammatory factors (11, 12). Of these, TLESR (8) and oxidant and inflammatory factors are important (13).

Myrtle and its fruit are known as “As” and “Hab-al-As” in ITM. According to traditional Medicine references, to be effective a drug on LES, it should be taken after a meal. Also Myrtle is useful in reducing edema, and strengthening the stomach and gastrointestinal tract (14, 15). Sabiha Sumbul et. al suggested that Myrtle fruit has different properties including decreasing ulcer index in all types of gastric ulcers, lowering gastric juice volume, increasing gastric pH and healing the gastric mucosa. Pathological finding demonstrated it to be more effective than omeprazole on gastric ulcer (16). Also it has

other benefits such as anti-emetic, anti-diarrhea and anti-dysentery properties (17). Another trial study by Zohalinezhad et. al showed that myrtle was effective on treatment of GERD, but there was no significant difference in comparison with omeprazole. (18). Myrtle contributed in treatment of GERD with a series of benefits such as acid reduction, healing of gastric ulcer, effect on TLESR, antioxidant and anti-inflammatory effects.

The quince (*Cydonia oblonga*) has anti-ulcerative, anti-microbial, anti-fungal, and antioxidant properties. A study by Akbarzadeh et. al on the use of the quince in neonatal reflux showed that the effect of quince was similar to omeprazole (19). According to ITM, quince strengthens the heart, stomach, and LES (14).

Conclusion

The most common mechanism of reflux is TLESR. However, in some cases of reflux, the damaging factor is not acidity and other factors may be involved. The main pharmacological treatment of reflux includes acid inhibitors drugs like H2 blockers or PPIs. One of the reasons for lack of response to standard anti-reflux treatment in our patient, is the above mechanism. It seems that traditional medicine can treat some of these disorders. The effect of “quince” in the treatment of GER is similar to omeprazole, while it also has other properties such as strengthening the LES.

Table 1: Ingredients of “myrtle syrup” per 5 ml

Name of drugs	Part used	Dosage (g)
Myrtus communis	fruit	1.6
sugar	-	2.4

It suggests its probable superiority compared to omeprazole. Myrtle has the same properties. These fruits overcome the most common mechanisms of GER and have a direct role in the patient's improvement. Therefore, it is suggested to conduct a study to evaluate their effects on reflux in children.

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