Ideally, all treatments should be followed under the direct supervision of a physician.

**Herbal Therapies**

Contributed by Laurie Radovsky, M.D.

Given the fact that some patients initially respond to valacyclovir and then relapse, it is possible that EBV has developed resistance to the antiviral.\(^1\) Herbs contain multiple compounds so development of resistance to their antiviral activity is unlikely. Also, herbs have synergistic properties that potentiate the effects of antibiotics and herbs, sometimes by sophisticated methods such as counteracting the efflux pumps of drug-resistant bacteria.\(^2\) This protocol can be used on its own or in conjunction with a pharmaceutical antiviral (valacyclovir). Use these herbs for a maximum of 2 months.

The herbs used have multiple functions, but their main ones are:

**Antiviral:** Artemisia\(^3\) and/or Usnea\(^4\) (preferably both)

**Immune support:** Reishi\(^5,6\)

**Adaptogen:** Licorice\(^7,8\) OR Eleuthero\(^9\) (Siberian Ginseng)

Unlike pharmaceutical antibiotics, the effective dose for herbal antivirals varies from person to person. Start at a low dose (lower range of dose once a day) for a few days and work up to the maximum dose tolerated or until you are seeing a change in your symptoms. Start each component separately in this order, at least 3 days apart. This will allow you to identify any side effects from each component. Work up to your maximum dose with each one before moving on to the next one. Most herbs can be used as tinctures (liquid extracts) or in capsules. Both are effective and the decision of which to use should be based on personal preference.

1. **Immune support: Reishi**

   Indications: A mushroom which is antibacterial, antifungal, antineoplastic, hepatoprotective, cardiotonic; active against plasmodial parasites. Strongly antiviral, especially against hepatitis viruses, herpes viruses, HIV and EBV. Profoundly immunostimulating, especially to the spleen. Activates immune effector cells including T cells, macrophages, and NK cells and stimulates the production of cytokines. Reishi has been used in China and Japan for 4,000 years for treatment

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of debility after a prolonged illness. It is a mushroom that can be eaten whole, but can be used medicinally as a powder or tincture.

Dose adult:
Tablets/powder: start with 1 gram once a day and work up to 1 gram 3 times a day.
Tincture: start with 1 tsp. once a day and work up to 2-4 tsp. up to 3 times a day.
Dose pregnant: probably safe.
Side effects/cautions: do not use in cases of obstructed bile duct. Do not use if you are on immunosuppressive therapy for organ transplant. May potentiate the effects of blood thinners such as warfarin or aspirin. May occasionally cause skin rash, diarrhea, dry mouth, sleepiness, bloating, frequent urination, sweating, nausea. Nausea may decrease when it is taken with food.
Brands:
Herb Pharm Reishi tincture costs $15.99 for one ounce in a 1:4 ratio (larger sizes available as dose increases).
Host Defense Reishi 500mg capsules cost $29.99 for 60 capsules.

2. Antiviral: Usnea

Common names: this is a lichen genus with multiple species and many names such as old man’s beard.
Indications: Antibacterial, antifungal, antiviral, antiparasitic, anti-inflammatory, antioxidant, Immunostimulant, inhibitor of biofilm formation, antineoplastic. Has activity against EBV and HSV.
Dose adult: the components to treat systemic illness must be extracted in alcohol, so only tinctures are recommended. Take 30-60 drops up to 4 times a day.
Dose pregnant: should not be used internally during pregnancy.
Side effects/cautions: may cause contact dermatitis.
Brands:
Usnea Herb Pharm tincture in a 1:4 ratio. 1 ounce costs $12.99 (larger sizes available as dose increases).

2. Antiviral: Artemisia annua

Common names: sweet Annie, sweet wormwood
Indications: Antibacterial, antifungal, antiviral, antimalarial, anti-protozoal, anti-inflammatory, antitumor, immune modulator, antineoplastic. Has activity against EBV. Not all constituents are systemic, which is why in vitro studies are not necessarily applicable to living organisms.
Dose adult: Start with a low dose to see how you respond to it and work up. Divide dose into twice or 3 times a day for 30-40 days only. (If it has not cleared up in that time, it is not likely to be effective.) Take 30 minutes before meals.
Tincture: up to 40 drops in 2 oz. of water or juice, two to four times per day.
Capsules: 500 mg. total per day divided into 2-3 doses.
Dose pregnant: contraindicated at least in the first trimester.
Dose child: Should be avoided by young children.
Side effects/cautions: Decreased appetite, nausea, diarrhea at higher doses. At high doses, liver enzymes need to be checked periodically. Long-term use can cause neurotoxicity. May reduce N-Acetyl cysteine, vitamin E and possibly other antioxidants, increasing risk of hearing or neuropathy.
Brands:
Artemisinin 100 mg. capsules by Allergy Research Group, $75 for 90 capsules. Herb Pharm (tincture). 1:5 ratio: $12.99 for one ounce. (larger sizes available as dose increases).

3. **Adaptogen: Licorice (if you hate the taste of licorice or have high blood pressure, use Eleuthero instead)**
   Indications: Antibacterial, antiviral, anti-inflammatory, antioxidant, immunomodulant and immunostimulant, antineoplastic. Accelerates the healing of gastric ulcers. Potent synergist (enhances effectiveness of other herbs and pharmaceuticals); in fact, it is preferable not to use it alone. It is effective against efflux mechanism of Gram negative organisms. Has activity against EBV.
   Dose adult:
   - Powdered root: 5-15 grams a day
   - Solid licorice extract: 1/8 tsp. a day. Dose pregnant: contraindicated.
   Dose child: children should not use more than 4-5 grams a day.
   Side effects/cautions: may increase blood pressure; avoid in patients with hypertension. Patients with normal blood pressure should check it after a week to make sure it is not being elevated. Prolonged use at high doses can cause edema, weakness, and headaches; it raises sodium and decreases potassium levels; have labs checked monthly. Do not use for more than 2 months. Should not be used with thiazide diuretics, potassium-sparing diuretics, digoxin or amiloride. May potentiate the effects of steroids such as prednisone and hydrocortisone. Has estrogenic effects.
   Brands:
   - Wise Woman Herbals solid licorice extract; 2 oz. is $16. Frontier Herbs bulk organic licorice root is $28/pound.

3. **Eleuthero (Siberian ginseng)**
   Indications: Adaptogen. Particularly helpful for stressed, overworked patients. Eleutherococcus stimulates immune function, decreases fatigue, reduces brain fog, and reduces depression. Supports adrenal and thyroid function. Dose adult:
   - Tincture: Start with 1 tsp. once a day and work up to 1 tsp. 3 times a day. Can increase or decrease based on weight/condition). Put the entire day's dose in a thermos of tea or water, & sip on it throughout the day.
   - Capsules: Start with 500 mg. a day and work up to 1 capsule 3 times a day. Dose pregnant: safe in pregnancy; use the same dose as adult.
   Side effects/contraindications: It can lead to insomnia if taken too late in the day. Transient diarrhea. May increase blood pressure though usually only temporarily. Can be photosensitizing.
   Brands: