Two interesting mistletoe therapy studies of primary liver cancer

12-11-2011

Primary liver cancer (HCC, also called hepatocellular cancer) is the world's fifth most frequent cancer. It presents itself with 2 problems: The cancer itself, and the underlying liver disease, which is often a cirrhosis. In developing countries liver disease is a result of frequent hepatitis, primarily hepatitis B and C.

In Egypt, there are 20,000 cases of primary liver cancer annually, and just as many die. A so-called 6-month median survival wall has existed for years, that no treatments could overcome until the oral multikinase inhibitor Sorafenib (Nexavar) in two Phase 3 studies in 2008 and 2009 respectively gave a median survival of 10.7 months. The patients were selected patients with a well functioning liver (Child-Pugh A).

In Egypt they have chosen to investigate the mistletoe, which has been used for nearly 100 years in Europe, for its effect on primary liver cancer and 2 studies have been carried out, both at the Mansoura University, north of Cairo. One study was published in the British Journal of Cancer in January 2004 and the other in the Chinese-German Journal of Clinical Oncology in August 2010. It was different researchers who conducted the two studies.

The first study included 23 patients with unresectable HCC. Treatment consisted of 40 mg of mistletoe (Viscum fraxini - ie mistletoe from ash tree) given subcutaneously (under the skin) 1 time per week as mono treatment. This special mistletoe has a high content of the so-called lectins (10,000 ng mitletoe lectins/ ml), which is considered one of the most active substances in mistletoe. Lectins inhibit tumor growth and formation of metastases by increasing apoptosis (cell death) through direct cytotoxicity, and by inhibiting angiogenesis (new formation of blood vessels). The other active substances in mistletoe are a) viscotoxins that causes disintegration of the cell membranes in cancer cells, b) polysaccharides, which activate the natural killer cells, and c) vesicles which enhance the growth of T cells and especially the helper cells.

3 of the patients (13.1%) experienced a complete remission, ie the cancer disappeared completely. These 3 patients had a median survival of 29 months. 2 patients had partial remission, ie the tumor was more than 50% reduced. In 9 patients progression was found (new growth) and 9 patients could not be assessed because of early death. The median survival for all

patients was 5 months. However, only 9 patients were in stage A, while 6 and 8 were in stage B and C, meaning advanced cirrhosis.

The second study included significantly more patients, namely 120. Only 37 were in stage A while 83 were in stage B. The treatment was exactly the same as in the first study: 40 mg Viscum fraxini only, given once a week subcutaneously. The median survival in this study reached 8 months and overcame thereby the 6-month wall like Sorafenib. In 2 patients the cancer disappeared completely, while 22 patients experienced partial tumor reduction as per RECIST criteria, 40 patients experienced stable disease. Stage A patients obtained significantly better results than stage B: 32% response in stage A vs. 15% in stage B.

Discussion: When comparing the 2 Sorafenib studies (Phase 3 studies) with the mistletoe study from 2010 (a phase 2 study) the most obvious difference is that all patients in the Sorafenib group had a well-preserved liver function (Child A) when they began treatment, while 83 out of 120 patients in mistletoe group belong to stage B, where the underlying liver disease is significantly more advanced. You can ask yourself whether there is any difference in treatment outcomes when this fact is compensated for.

Another difference is the price. The dosage of Sorafenib is 400 mg 2 x daily in tablet form, equivalent to USD 3.000/month, while the mistletoe treatment amounts to around USD 100/month.

In addition, you can probably increase the effects of mistletoe by giving it 2 to 3 times a week as you usually do with mistletoe. When it was given once a week in Egypt, it was for practical reasons, so patients only needed to come to the clinic once a week.

There were no serious side effects of the mistletoe therapy while 80% of patients in Sorafenib treatment experienced diarrhea, abdominal pain, weight loss, lack of appetite, and liver dysfunction and more than a 1/3 had to stop treatment because of side effects. In additional 26% of patients, a dose reduction had to be made due to side effects.

Conclusion: Mistletoe is a very interesting and inexpensive treatment of primary liver cancer without side effects.