

# ANGIOGENESIS INHIBITION IN LIFE THREATENING ILLNESS

When cancers' grow the tumour mass cannot grow beyond about 2 cubic millimetres without establishing a blood supply, because passive diffusion of nutrients and waste products is insufficient for the tumours metabolic needs. In order to transfer these substances, tumour cells need to be very close to a capillary vessel and this therefore requires new vessels to establish themselves. This new vessel formation involves the growth of columns of lining cells of blood vessels from pre-existing small veins or capillaries towards the developing tumour mass. New vessels are induced to form as a result of a release of a variety of substances by the tumour which encourages new blood vessel formation. These newly formed blood vessels are more 'leaky' than normal vessels and therefore provide relatively easy access to the circulation for tumour cells around these blood vessels. It is probably for this reason that the tendency of tumours to form secondary tumours, a process known as metastatisation, is directly related to the number of new blood vessels found in a growing tumour mass.

One of the promising areas of treatment in cancer is the use of angiogenesis inhibitors, which slows this process down. We have been using for some time an effective angiogenesis inhibitor which is a low molecular weight extract of the bindweed (*convululus arvensis*). This herbal extract is difficult to prepare. Several animal studies have been carried out using this preparation, using a standard model known as the mouse sarcoma 180 model. Tumour kill has been as high as 85% in this experimental model, which makes this herbal extract a promising candidate for use in a wide range of solid tumours. This is largely because it is well tolerated and can be taken orally, which is known as C-Statin. No human clinical studies have yet been done, but anecdotally there have been some remarkable individual case examples at various stages of the cancer process, even in late stages. The dose needs to be two tablets three times a day, and this can be relatively expensive, but if it keeps the tumour at bay it provides a useful simple, and non-toxic approach.

As angiogenesis inhibitors and particularly C-Statin, are a powerful remedy, it is best given under medical supervision.

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