CONTINUING EDUCATION

Antiangiogenesis:
The Fifth Cancer Treatment Modality?

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Purpose/Objectives: To describe the biologic process of angiogenesis and the potential role of antiangiogenesis therapy in cancer treatment.

Data Sources: Published articles, conference proceedings, and computerized databases.

Data Synthesis: Angiogenesis is the development of blood vessels. Antiangiogenic agents prevent the development of blood vessels, therefore preventing one mode of cancer metastasis. Clinical trials must be conducted to ascertain the most powerful antiangiogenic therapies. Trials combine chemotherapy, biotherapy, and radiotherapy with antiangiogenic therapy.

Conclusions: Information from animal studies has revealed that antiangiogenesis is a viable option in treating cancer and preventing metastasis. Although human studies are rare, preliminary results are promising, especially when angiogenesis is used in combination with current cancer treatment modalities.

Implications for Nursing: Nurses are in a unique position to teach patients about new treatments for cancer. Nurses must be knowledgeable about angiogenesis and the availability of potential antiangiogenesis agents. Nurses will be vital in collecting data in clinical trials, considering the subjective data that will be obtained.

Key Points . . .

➤ Angiogenesis is the development of blood vessels.
➤ Tumor growth and subsequent metastasis require persistent new blood vessel growth.
➤ Antiangiogenic agents prevent the development of blood vessels, therefore preventing one mode of cancer metastasis.
➤ Clinical trials with antiangiogenic agents may be difficult to conduct because typical end points involve time to progression or clinical improvement with subjective data such as decrease in pain or no further weight loss.

Goal for CE Enrollees:

To further enhance nurses’ knowledge regarding angiogenesis.

Objectives for CE Enrollees:

On completion of this CE, the participant will be able to
1. Describe the biologic process of angiogenesis.
2. Discuss the potential role of antiangiogenesis therapy in cancer treatment.
3. Discuss the implications for nursing practice with antiangiogenesis therapy.

Definition of Angiogenesis

Angiogenesis is defined as the development of blood vessels. Angio means related to blood vessels, and genesis means development. Angiogenesis is fundamental to the reproduction, development, and repair of blood vessels. Blood vessels are formed from endothelial cells that connect to form a tubular structure to maintain blood flow and tissue perfusion. Normally, in an adult, blood vessels are formed from preexisting vessels such as capillaries through the process of angiogenesis (Volpert, 2000). This process is regulated tightly by numerous proangiogenic and antiangiogenic factors.