

Radiology 2018: Judging response to cancer therapy RECIST and Beyond- Arvind K Chaturvedi- Rajiv Gandhi Cancer Institute & Research Centre

Arvind K Chaturvedi

Rajiv Gandhi Cancer Institute & Research Centre, India

Objective:

Cancer therapy describes the treatment of cancer in a patient, often with surgery, chemotherapy and/or radiotherapy. Targeted therapies are also available for some cancer types. A cancer patient might receive many different types of therapy, including those aimed at relieving the symptoms of cancer, such as pain. Many cancer treatments exist. Depending on your particular situation, you may receive one treatment or you may receive a combination of treatments. The goal of cancer treatment is to achieve a cure for your cancer, allowing you to live a normal life span. This may or may not be possible, depending on your specific situation. If a cure isn't possible, your treatments may be used to shrink your cancer or slow the growth of your cancer to allow you to live symptom free for as long as possible. Cancer treatments may be used as: Primary treatment. The goal of a primary treatment is to completely remove the cancer from your body or kill all the cancer cells. Any cancer treatment can be used as a primary treatment, but the most common primary cancer treatment for the most common types of cancer is surgery. If your cancer is particularly sensitive to radiation therapy or chemotherapy, you may receive one of those therapies as your primary treatment. Adjuvant treatment. The goal of adjuvant therapy is to kill any cancer cells that may remain after primary treatment in order to reduce the chance that the cancer will recur. Any cancer treatment can be used as an adjuvant therapy. Common adjuvant therapies include chemotherapy, radiation therapy and hormone therapy. Neoadjuvant therapy is similar, but treatments are used before the primary treatment in order to make the primary treatment easier or more effective. Palliative treatment. Palliative treatments may help relieve side effects of treatment or signs and symptoms caused by cancer itself. Palliative treatment can be used at

the same time as other treatments intended to cure your cancer. Cancer treatment options include: Surgery: The goal of surgery is to remove the cancer or as much of the cancer as possible. Chemotherapy. Chemotherapy uses drugs to kill cancer cells. Radiation therapy. Radiation therapy uses high-powered energy beams, such as X-rays or protons, to kill cancer cells. Radiation treatment can come from a machine outside your body (external beam radiation), or it can be placed inside your body (brachytherapy). Bone marrow transplant. Your bone marrow is the material inside your bones that makes blood cells from blood stem cells. A bone marrow transplant, also known as a stem cell transplant, can use your own bone marrow stem cells or those from a donor. A bone marrow transplant allows your doctor to use higher doses of chemotherapy to treat your cancer. It may also be used to replace diseased bone marrow. Immunotherapy. Immunotherapy, also known as biological therapy, uses your body's immune system to fight cancer. Cancer can survive unchecked in your body because your immune system doesn't recognize it as an intruder. Immunotherapy can help your immune system "see" the cancer and attack it. Hormone therapy. Some types of cancer are fueled by your body's hormones. Examples include breast cancer and prostate cancer. Removing those hormones from the body or blocking their effects may cause the cancer cells to stop growing. Targeted drug therapy. Targeted drug treatment focuses on specific abnormalities within cancer cells that allow them to survive. Cryoablation. This treatment kills cancer cells with cold. During cryoablation, a thin, wandlike needle (cryoprobe) is inserted through your skin and directly into the cancerous tumor. A gas is pumped into the cryoprobe in order to freeze the tissue. Then the tissue is allowed to thaw. The freezing and thawing process is repeated several times during the same treatment session in order to kill the cancer cells. Ra-