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Commentary

A Brief Note on Monoclonal Antibodies

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DESCRIPTION

One way the body's immune system attacks foreign substances is by making large number of antibodies. An antibody is a protein that sticks to a specific protein called an antigen. Experimenters can design antibodies that specifically target a certain antigen, similar as one plant on cancer cells. They can also make numerous clones of that antibody in the lab, these are known as Monoclonal Antibodies (mAbs) [1-2].

Monoclonal antibodies are used to treat numerous diseases, including some types of cancer. To make a monoclonal antibody, experimenters first have to identify the right antigen to attack. Chancing the right antigens for cancer cells isn't always easy, and so far mAbs have proven to be more useful against some cancers than others.

Monoclonal antibodies are man- made proteins that act like human antibodies in the immune system. There are 4 different ways they can be made and are named based on what they're made of.

1. **Murine:** These are made from mouse proteins and the names of the treatments end in-omab.
2. **Chimeric:** These proteins are a combination of part mouse and part human and the names of the treatments end in-ximab.
3. **Humanized:** These are made from small corridor of mouse proteins attached to mortal proteins and the names of the treatments end in-zumab.
4. **Human:** These are completely human proteins and the names of the treatments ends.

Conjugated mAbs are combined with a chemotherapy medicine or a radioactive particle. These mAbs are used as a homing device to take one of these substances directly to the cancer cells [3]. The mAb circulates throughout the body until it can find and hook onto the target antigen. It also delivers the poisonous substance where it's demanded most. This lessens the damage to normal cells in other organs of the body. While monoclonal antibodies are used treat many diseases. They are mostly used totreat cancer. Mainly the monoclonal antibodies are produced from the B lymphocytes and mouse cells. They commonly called as cancerous cells or myeloma cells. It also delivers the poisonous substance where it's demanded most [4]. This lessens the damage to normal cells in other corridor of the body. By binding to both of these proteins, this medicine brings the cancer cells and immune cells together, which is allowed to cause the immune system to attack the cancer cells. Monoclonal antibodies are given intravenously (fitted into a vein). The antibodies themselves are proteins, so giving them can occasionally cause commodity like an antipathetic response [5].

Compared with chemotherapy medicines, naked mAbs tend to have smaller serious side effects. But they can still cause problems in some people. Some mAbs can have side effects that are related to the antigens they target.

1. Bevacizumab (Avastin) is a mAb that targets a protein called VEGF that affects excrescence blood vessel growth. It can cause side effects similar as high blood pressure, bleeding, poor crack healing, blood clots, and kidney damage.
2. Cetuximab (Erbitux) is an antibody that targets a cell protein called EGFR, which is plant on normal skin cells (as well as some types of cancer cells). This medicine can cause serious rashes in some people.

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