Monoclonal antibody therapy

Monoclonal antibody therapy is a form of immunotherapy that uses monoclonal antibody (mAb) to bind monospecifically to certain cells or proteins. This may then stimulate the patient's immune system to attack those cells. Alternatively, in radioimmunotherapy a radioactive dose localizes on a target cell line, delivering lethal chemical doses.

Antibodies have been used to bind to molecules involved in T-cell regulation to remove inhibitory pathways that block T-cell responses, known as immune checkpoint therapy.

It is possible to create a mAb specific to almost any extracellular/ cell surface target. Research and development is underway to create antibodies for diseases (such as rheumatoid arthritis, multiple sclerosis, Alzheimer's disease, Ebola and different types of cancers).

The Wnt receptor Frizzled-7 (FZD7) promotes tumor progression and can be currently targeted by monoclonal antibody therapy.

In a study, nMAb treatment for COVID-19 was safe and associated with reductions in ED visits, hospitalization, and death, although it was not associated with reduced risk of hospitalization during the Omicron BA.1 epoch. These findings suggest that targeted risk stratification strategies may help optimize future nMAb treatment decisions [1)]

1)
Ambrose N, Amin A, Anderson B, Barrera-Oro J, Bertagnolli M, Campion F, Chow D, Danan R, D'Arinzo L, Drews A, Erlandson K, Fitzgerald K, Garcia M, Gaspar FW, Gong C, Hanna G, Jones S, Lopansri B, Musser J, O'Horo J, Piantadosi S, Pritt B, Razonable RR, Roberts S, Sandmeyer S, Stein D, Vahidy F, Webb B, Yttri J. Neutralizing Monoclonal Antibody Use and COVID-19 Infection Outcomes. JAMA Netw Open. 2023 Apr 3;6(4):e239694. doi: 10.1001/jamanetworkopen.2023.9694. PMID: 37093599.