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NOVEL THERAPEUTIC AGENTS IN SKIN DISEASES

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Use of monoclonal antibodies (mAbs) in field of diagnostic and therapy is evident. They are developed to treat cancer, immune and infectious diseases (Rajewsky, 2019). Biologic agents are essential alternative for treating different skin diseases. Etanercept, infliximab and adalimumab are used to treat moderate-to-severe plaque psoriasis. These mAbs inhibit TNF (Tumor necrosis factor)- α and approved by FDA (US Food and Drug Administration). Also, Secukinumab and ixekizumab are anti IL-23/IL-17A receptors that received FDA approval and show high efficacy to treat plaque psoriasis. It is worthy of note that secukinumab received FDA approval for arthritic psoriasis. The biosimilars for the 3 anti-TNF- α etanercept, adalimumab and infliximab have been officially FDA approved since 2016 and represent a potential cost savings (Veilleux; Shear, 2017). Dupilumab is a IL-4 receptor - α antibody that inhibits IL-4 and IL-13 signaling targeting atopic dermatitis (AD). This agent showed valid results in phase 3 trial and still under investigation by European union and Japan according to safety and efficacy. There are some other biologic agents as like Mepolizumab, Tralokinumab, lebrikizumab, Nemolizumab, Ustekinumab and Apremilast in a phase II study in the therapy of AD. (Veilleux; Shear, 2017, Del Rosso (2019). Dacarbazine and IL-2 are two new FDA approved medications for advanced melanoma, although survival rate was not improved by these drugs. Ipilimumab is a fully human mAb (IgG1) that restricts T cell activation by inhibiting cytotoxic T lymphocyte-associated antigen 4 (CTLA-4); drug showed these effects in phase 3 trial and enhanced survival in melanoma. Dabrafenib and trametinib are inhibitors of the mitogen-activated protein kinase pathway and FDA approved in melanoma. For some of these drugs response rate is high although, duration of maintenance of effect is low. Ipilimumab represent only 10.9% response rate is but with a quite high maintained response of 60% at 2 years. Pembrolizumab and nivolumab, programmed cell death-1 (PD-1) inhibitor antibodies with 30% to 40% and durable response rate. Demonstrating some adverse effects in patients giving immunotherapy should be considered. Using lower doses with assuring response rate may minimize side effects. Pidilizumab and atezolizumab are some other PD-1 targeting agents under different phases of investigations. Biologic agents may be possible effective approaches for patients with hidradenitis suppurativa (HS).

References:

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