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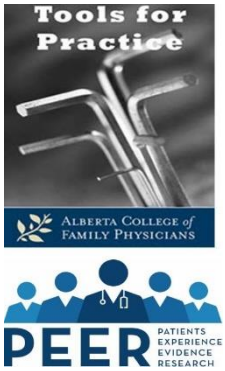

It's all in the details... or is it? Biosimilars versus biologics for inflammatory conditions.

Clinical Question: How do biosimilar medications compare to their corresponding originator biologic medications in treating patients with conditions like rheumatoid arthritis or inflammatory bowel disease?

Bottom Line: For patients with rheumatoid arthritis, other inflammatory arthropathies, or inflammatory bowel disease, biosimilars and biologics have similar clinical outcomes and adverse events. Given the cost differences, starting patients with or switching to biosimilars should be encouraged.

Evidence:

- Focusing on double-blind, randomized, controlled trials (RCTs). No differences below were statistically significant.
- Switching from originator biologic to corresponding biosimilar:
    - Publicly-funded RCT of 482 patients with mostly inflammatory bowel disease or rheumatological conditions.[1] Patients stable on biologic infliximab randomized to continue biologic infliximab or switch to biosimilar infliximab. At one year:
        - Proportion with disease "worsening" (disease specific scales or patient/provider consensus):
            - Overall: 30% biosimilar, 26% biologic.
            - Individual conditions: no differences.
        - Remission rates or quality of life: similar.
    - RCT of 195 rheumatoid arthritis patients randomized to continue biologic or switch to biosimilar infliximab.[2] At 24 weeks following switch:
        - Proportion with ≥20% symptom improvement:
            - 64% biosimilar, 69% biologic.
- Starting on either biosimilar or biologic:
    - All non-inferiority/equivalence studies funded by biosimilar makers.
        - Rheumatoid Arthritis:
            - Etanercept: 3 RCTs (1266 patients):[3-5]
                - Proportion with ≥20% improvement at 24 weeks: 78-93% biosimilar, 80-87% biologic etanercept.
            - Infliximab: 4 RCTs (1875 patients):[6-9]
                - Proportion with ≥20% improvement at 30 weeks:[7-9] 61-78% biosimilar, 59-65% biologic infliximab.

        - At 54 weeks: 64-75% biosimilar, 49-71% biologic.[7,9]
    - Rituximab[10] and adalimumab[11-13] had similar results.
- Crohn's Disease:
    - Infliximab: 1 RCT (220 patients)[14] randomized to start biosimilar or biologic infliximab.
        - Proportion achieving clinically relevant change in symptoms at 30 weeks: 77% biosimilar, 75% biologic.
- Similar rates of serious and overall adverse events, infusion reactions, and anti-drug antibody development.[1-14]

Context:

- Regulatory agencies require biosimilars to have no clinically meaningful differences in safety and efficacy compared to originator biologic.[15]
- Canada spends annually:
    - >$1 billion on biologics for rheumatological/gastrointestinal conditions.[16]
- In Alberta:
    - Biosimilar infliximab costs around half of biologic infliximab:
        - 400mg dose: $2200 versus $4000.[17]
    - 98% of infliximab spending is on biologic product.[18]
- Some countries have substitution policies to increase biosimilar use.[15]

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