

Safety and Efficacy of Anifrolumab in Systemic Lupus Erythematosus: Systematic Review with Network Meta-analysis

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Introduction: Enhanced cold sensitivity is an early and consistent phenomenon in scleroderma (SSc). Introduction: Anifrolumab is a human monoclonal antibody targeting type 1 interferon receptor subunit 1 for treatment of systemic lupus erythematosus (SLE) with varying results. We performed a systematic review and network meta-analysis comparing varying doses of Anifrolumab versus placebo for treatment of SLE.

Methods: A comprehensive search of different databases was undertaken through May 31, 2022. The primary outcome was British Isles Lupus Assessment Group (BILAG)-based Composite Lupus Assessment (BICLA) score at 52 weeks. Secondary outcomes assessed included overall flares at 52 weeks, adverse events and serious adverse events. Network meta-analysis was conducted using random effects model and frequentist approach.

Results: A total of 3 RCTs with 4 unique intervention arms were included (Placebo, Anifrolumab 150mg, Anifrolumab 300mg, and Anifrolumab 1000 mg). A total of 1129 patients were randomized, of which 953 (84.4%) completed the study. The mean age of patient was 41.2 ± 1.3 years and female proportion was 1045/1129 (92.5%). Significantly higher 'BICLA response' was noted for Anifrolumab 300mg compared to placebo (RR: 1.61, CI: 1.30-1.99) (Figure 1A). The overall 'flares' were also significantly lower for Anifrolumab 300mg compared to placebo (RR: 0.76, CI: 0.65-0.90) (Figure 1B). The adverse events were evaluated by 4 groups. Significantly higher 'any adverse events' were noted for Anifrolumab 300mg (RR: 1.10, CI: 1.04-1.16) and Anifrolumab 1000mg (RR: 1.14, CI: 1.02-1.26) (Figure 1C). None of the groups of Anifrolumab showed significantly higher adverse events compared to Placebo (Figure 1D). Using the P-score, Anifrolumab 300mg was ranked higher for improved BICLA

response and lower flares, while the placebo group ranked higher for lower overall and serious adverse events.

Conclusion: Anifrolumab 300mg showed significantly better response at 52 weeks and lower overall flare events for SLE. The drug can be employed in clinical practice for SLE patients.