The Impact of Reducing Dosing Frequency of Oral Therapies on Adherence, Compliance, and Cost for Acute and Chronic Illnesses: A Meta-Analysis

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OBJECTIVES

To evaluate the adherence, therapeutic, and economic outcomes associated with different dosing schedules

METHODS

A random-effects meta-analysis was conducted on the pooled OR data retrieved across all the disease areas for the OD dosing schedule in comparison to the BID dosing schedule.

RESULTS

The random-effects model regression plot was generated using 13 point estimates for adherence.

The BID dosing schedule was associated with a higher adherence rate in comparison to the TID dosing schedule, with a CI of 0.107; I² = 39.4% for depression (n=3) OD vs. BID 3.10 (2.15–4.47); P <0.001; I² = 91.3%; for cardiovascular system disorder (n=6) OD vs. BID 3.20 (0.78, 13.14); P >0.05; I² = 64.4%; for diabetes (n=10) OD vs. BID 1.29 (0.20, 8.43); P <0.001; I² = 39.4%; for respiratory tract infection (n=7) OD vs. BID 2.38 (1.96, 2.86); P <0.001; I² = 8.8% for chronic pain (n=6574) OD vs. BID 3.85 (3.16, 4.76); P <0.001; I² = 76.0% in patients with chronic pain, but due to the lack of published evidence in this disease area, the protocol was amended to include the OD vs. >OD dosing schedule. The OD dosing schedule was associated with a higher adherence rate compared to the >OD dosing schedule, with a CI of 0.107; I² = 39.4%; for depression (n=3) OD vs. >OD 3.62 (1.11, 11.74); P <0.001; I² = 91.3%; for cardiovascular system disorder (n=6) OD vs. >OD 2.92 (0.96, 8.83); P =0.012; I² = 64.4%; for diabetes (n=10) OD vs. >OD 1.29 (0.20, 8.43); P <0.001; I² = 39.4%; for respiratory tract infection (n=7) OD vs. >OD 2.38 (1.96, 2.86); P <0.001; I² = 8.8%.

Economic impact of Substantial Adherence and Compliance to Therapies

The economic outcomes of the meta-analysis, expressed as mean QALYs gained and mean associated costs, are shown in Table 4. No publication was found that evaluated higher adherence rates with OD dosing schedules in patients with chronic pain, but due to the lack of published evidence, the protocol was amended to include the OD vs. >OD dosing schedule. The OD dosing schedule was associated with a higher adherence rate compared to the >OD dosing schedule, with a CI of 0.107; I² = 39.4%; for depression (n=3) OD vs. >OD 3.62 (1.11, 11.74); P <0.001; I² = 91.3%; for cardiovascular system disorder (n=6) OD vs. >OD 2.92 (0.96, 8.83); P =0.012; I² = 64.4%; for diabetes (n=10) OD vs. >OD 1.29 (0.20, 8.43); P <0.001; I² = 39.4%; for respiratory tract infection (n=7) OD vs. >OD 2.38 (1.96, 2.86); P <0.001; I² = 8.8%.

Additional research is required in the area of adherence to treatments for chronic pain management to better understand the impact of reducing dosing frequency on adherence, compliance, and persistence.

DISCUSSION AND CONCLUSION

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