Introduction

Real-world data (RWD) allow observation of trends and changes in COVID-19 prescription patterns.

Objective

Describe treatment trends for hospitalized COVID-19 patients in the United States

Materials and Methods

- Patients hospitalized with COVID-19 identified using HealthVerity claims and Chargemaster data (March-December 2020). HealthVerity includes de-identified data from major payer types (commercial, Medicaid, and Medicare) from all US states and territories.
- Percent of patients newly treated (90 day new user washout) with therapies of interest during the first week of the hospital stay
- Trends by calendar week of admission, overall and by COVID-19 severity (requirement for invasive mechanical ventilation [IMV] or supplementary oxygen [O2] using a simplified version of the modified WHO score. Admissions without evidence of respiratory support requirements classified as "Admissions without requirement for O2/IMV")
- All analyses conducted using the Aetion Evidence Platform® (2021).

Results

Among the 85,970 patients (87,128 admissions) included, the most commonly used treatments were azithromycin (42.2%) and hydroxychloroquine (39.2%) early in the pandemic (March/April 2020), and dexamethasone (59.6%) and remdesivir (42.1%) later on (November/December 2020) [Figure 1].

- Azithromycin use declined from March (52.8%) to May (25.6%) before stabilizing at ~35% weekly use in August.
- Hydroxychloroquine treatment declined sharply after peak use in March (51.8%), with <1% use from July-December [Figure 1]. FDA revoked its Emergency Use Authorization (EUA) on June 15, 2020.
- Dexamethasone use increased sharply from June (5.8%) to July (48.1%), a trend consistent for both levels of severity [Figures 2-3]. The results of the UK RECOVERY trial results were published in mid-June.
- Remdesivir use increased in early July among patients requiring IMV/O2, with use exceeding 10% by mid-July, while uptake in patients not requiring IMV/O2 lagged, exceeding 10% by October [Figures 2-3]. The EUA was originally issued on May 1, 2020.

Conclusions

- Considerable temporal shift in prescribing trends in hospitalized COVID-19 patients, with remdesivir and dexamethasone surpassing hydroxychloroquine use following publication of emerging scientific data and FDA regulatory actions.
- Immediate and substantial increase in dexamethasone use followed publication of the RECOVERY trial results.
- Trends may also have been influenced by factors such as physician experience with disease management, access to medications, guidelines, and perceived efficacy/safety relative to other treatment options.

References: