Acceptance code: HSD18

Burden of in-clinic and at-home administration of injectable biologics for severe asthma and chronic rhinosinusitis with nasal polyps: Interim results from a time and motion study

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This poster is being presented by Elise Kuylen (an employee of GSK) on behalf of the authors

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*At the time of the analysis

Both **in-clinic** and **at-home injectable biologic administration** demonstrated a considerable **burden on HCPs and patients**. **Higher dosing frequency** was associated with a **greater burden for in-clinic administration**

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Background

- Biologics targeting type 2 inflammation, administered every 2–8 weeks depending on the product, are approved as add-on maintenance therapy for patients with inadequately controlled severe asthma and/or CRSwNP[1,2]
- Previous findings suggest that a lower frequency of biologic administration is associated with greater treatment adherence among patients[3] and is preferred by physicians and patients[4]
- However, a paucity of data exists regarding the burden and time associated with biologic administration
- Time and motion methodology deconstructs often complex workflows associated with specific healthcare practice into individual tasks.[5] By measuring the time needed for each task through multiple observations, time and motion studies can help identify time burdens associated with dynamic workflows[5,6]

Aim

- To quantify HCP and patient time associated with in-clinic and at-home injectable biologic administration for severe asthma and/or CRSwNP

Methods

Observational, non-interventional, multi-country, time and motion study (GSK ID: 214575)

2 workflows

- **Workflow 1:** *In-clinic* injectable biologics administration
- **Workflow 2:** In-clinic tasks related to injectable biologics administration *at home*

Data subjects

HCPs performing pre-specified management and/or administration tasks related to injectable biologics of adult patients with severe asthma and/or CRSwNP

Adult patients with severe asthma and/or CRSwNP treated and administered an injectable biologic as part of routine care who completed a one-time survey

15 sites across 8 countries

China (2), France (1), Germany (1), Italy (3), Japan (2), Spain (2), UK (2), and US (2)

Outcomes

Active HCP time

Measured via stopwatch (sequential tasks) and time-of-day self-observation/estimates via interview (non-sequential tasks)

Patient time

Collected as time-of-day (in-clinic) and via patient surveys (in-clinic and at-home)

Analysis and modelling (descriptive, non-hypothesis testing study)

- **Target samples per site:** ≤20 in-clinic observations (Workflow 1; excluding France); ≤10 self-observations per task (Workflow 2)
- **Time model included biologic administration frequency for:** dupilumab (Q2W; 26/year), mepolizumab (Q4W; 13/year), omalizumab (Q4W; 12/year), tezepelumab (Q4W; 13/year), benralizumab (Q8W; 8/year)
- **Observed time (via CRF) or reported time (via interview)** for each task related to injectable biologics management was multiplied by its expected annual frequency and time for all tasks was summed to yield total time per patient per year

Interim analysis was conducted across 4 countries (7 sites)

China (2) · France (1) · Japan (2) · UK (2)

Pooled country results were calculated assuming an equal weight for each site for the first year of treatment (weighted means approach)

At each site, a semi-structured interview was conducted to support the development of two site-specific CRFs

HCP perspective

Workflow 1 (in-clinic)

Sequential tasks per visit (CRF)

1. Check patient schedule (i.e. injectable biologics type and dose)*
2. Collect injectable biologics and consumables
3. Pre-administration vital signs check†
4. Administer injectable biologics
5. Waste disposal
6. Record-keeping related to injectable biologics‡
7. Post-administration monitoring§
8. Post-administration vital signs check¶

Other relevant non-sequential tasks (CRF and interview)

1. Patient registration (injection visit day)
2. Pick up drug from pharmacy (injection visit day)
3. Scheduled doctor consultation visit
4. Scheduled nurse biologic review clinic**
5. Prescription of biologics††
6. Dispensing of injectable biologics to individual patient (at hospital pharmacy)
7. Schedule appointment for next visit(s)
8. Clinical tests (prior to administration visit)**

Workflow 2 (at home)‡‡

Relevant non-sequential tasks (CRF and interview) in addition to Workflow 1 CRF sequential steps 1–8

1. Extra training time during initial in-clinic visit(s)
2. During scheduled doctor consultation visit, extra time for education/counselling regarding self-administration at home§§
3. Consultation eVisit**
4. Patient obtains dispensing information and queue ticket¶¶
4. Routine check on home administration (via phone/email***)
5. Patient/community pharmacy contacts clinic related to injectable biologics and subsequent outreach to doctor†††
6. Discuss patient call†††
7. Clinic staff contacts patients related to injectable biologics†††

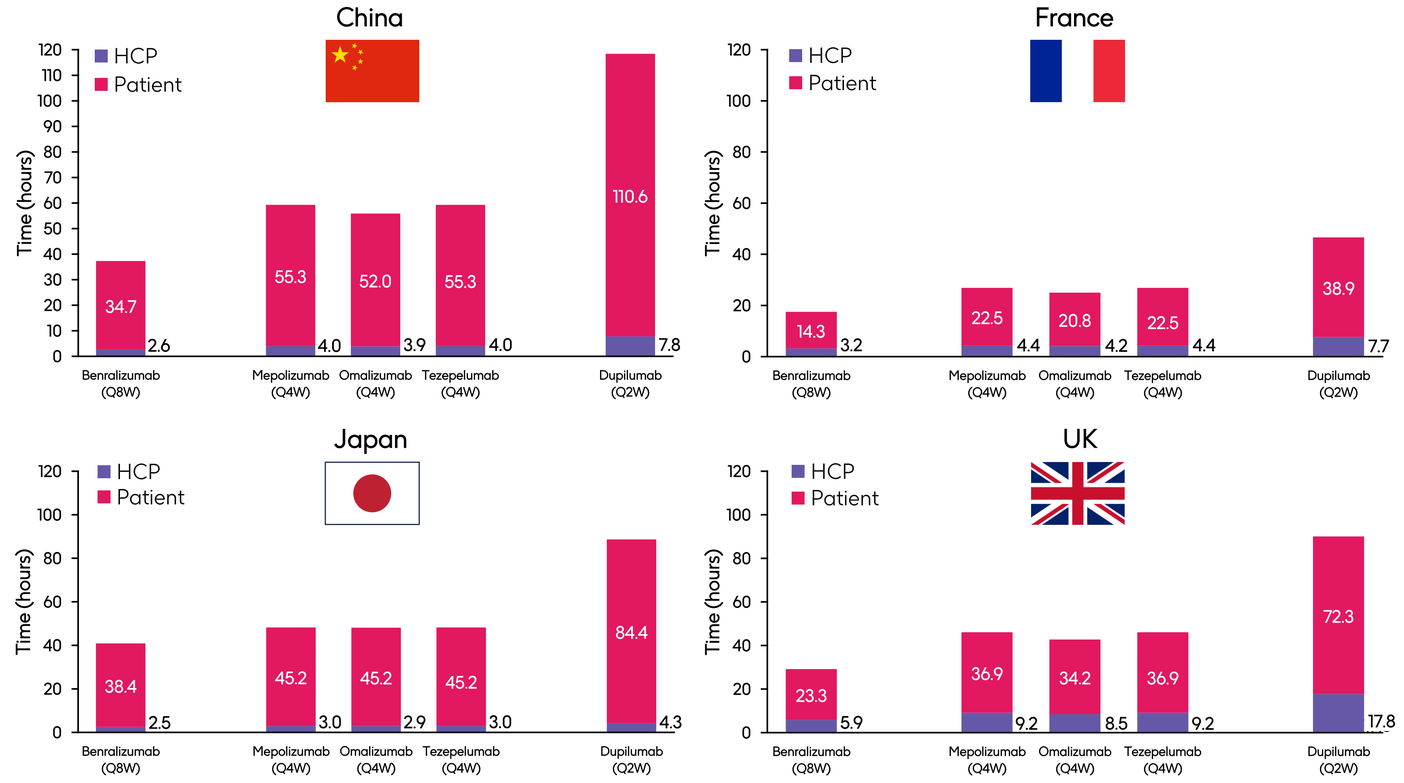
Patient perspective

1. Travel time (to and from community pharmacy to pick up biologic) [Workflow 2 only]‡‡‡
2. Travel time (to and from healthcare facility)
3. Chair time
4. Facility time (injection visit and doctor visit)
5. Facility time (injection visit only)
6. Facility time (doctor visit only)

*Except China site 2; †except China (both sites) and UK site 1; ‡except China (both sites); §except China (both sites) and Japan site 1; ¶except China (both sites) and Japan (both sites); **UK only; ††communication with doctor, generation, approval (UK only), hand to patient; ‡‡time and frequency of other relevant non-sequential tasks that were not included in Workflow 2 CRF were elicited via interview; §§Japan site 2 and UK; ¶¶Japan site 1 only; ***China site 2 only; †††France only; ‡‡‡except China and UK*

Results

Figure 1: **Estimated total HCP and patient yearly time burden for all activities contributing to in-clinic biologic administration (Workflow 1) increased with increasing biologic dose frequency for severe asthma across all countries***

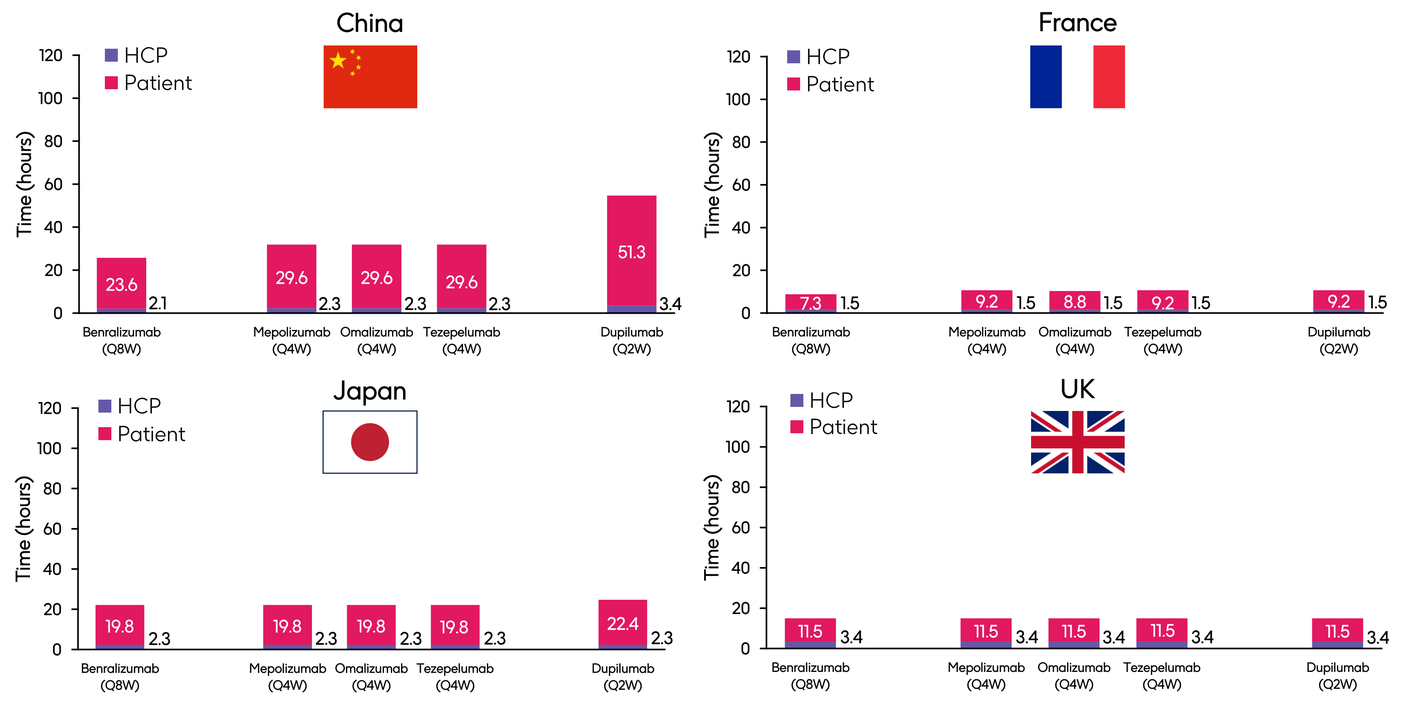


Note: results presented have been updated since abstract submission to include final data and analyses

**Results reported for patients with severe asthma (France and the UK) and both indications (China and Japan). The pattern of time burden for in-clinic administration of biologics approved for CRSwNP was almost identical to that described for severe asthma (statement not applicable to UK as sites were pulmonary departments treating severe asthma and unable to report on CRSwNP)*

Figure 2: **Activities contributing to at-home biologic administration were associated with a considerable estimated total HCP and patient time burden in Year 1 (Workflow 2)***

- The patterns of HCP time and patient time burden for at-home biologic administration were comparable across biologics and countries, except in China;† this does not include patient time to prepare and self-administer biologics at home



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**Results reported for patients with severe asthma (France and the UK) and both indications (China and Japan). The pattern of time burden for at-home administration of biologics approved for CRSwNP was almost identical to that described for severe asthma (statement not applicable to UK as sites were pulmonary departments treating severe asthma and unable to report on CRSwNP); †HCP time in China showed differences by biologic due to a difference in the frequency of scheduled doctor consultation visits and biologic prescription. Patient time in China was higher for dupilumab due to a higher number of doctor visits compared to other biologics*

Conclusions

In-clinic and **at-home injectable biologic administration** demonstrated a **substantial overall burden on HCPs and patients**

Among the biologics assessed, **dupilumab** was associated with the **highest in-clinic time burden,** while **benralizumab** had the **lowest**

Heterogeneity was observed between countries, likely driven by **healthcare system differences**, especially in how the biologics are dispensed to the patient

Abbreviations

CRF, case report form; CRSwNP, chronic rhinosinusitis with nasal polyps; HCP, healthcare professional; Q2/4/8W, every 2/4/8 weeks; UK, United Kingdom; US, United States

References

1. Faria N et al. *J Clin Med.* 2025;14:3153
2. Luk HG et al. *Ear Nose Throat J.* 2025;00:1455613251363018
3. Ledford DK et al. *Ann Allergy Asthma Immunol.* 2023;131:598–605
4. Gelhorn HL et al. *Patient Prefer Adherence.* 2019;13:1253–68
5. Lopetegui M et al. *J Biomed Inform.* 2014;0:292–99
6. Rog D et al. *Mult Scler Relat Disord.* 2024;82:105380

Acknowledgements

This study was funded by GSK (GSK ID: 214575). Editorial support (in the form of writing assistance, including preparation of the draft poster under the direction and guidance of the authors, collating and incorporating authors' comments for each draft, assembling tables and figures, grammatical editing and referencing) was provided by Ella Ferris, MSc, at Fishawack Indicia Ltd, UK, part of Avalere Health, and was funded by GSK.

Disclosures

EDC was employed by Syneos Health at the time of the study, which received funding from GSK for the conduct of this study, **JB** and **JP** are employed by Syneos Health, which received funding from GSK for the conduct of this study. **WA** and **RA-C** were employed by GSK at the time of the study. **SN** is employed by GSK and holds financial equities in GSK.

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