The International Guillain-Barré Syndrome Outcome Study: Study population, publications and ongoing research

Eveline J.A. Wiegers[1], L.C. de Koning[1], L.W.G. Luijten[1], F. Pelouto[1], R.C.M. Thomma[1,2], M. van Woerkom[1], B.C. Jacobs[1,2] on behalf of the IGOS Consortium

Affiliations: Dept. of Neurology[1] and Dept. of Immunology[2], Erasmus MC University Medical Center, Rotterdam, The Netherlands

Feel free to ask me any questions or give me remarks on this poster!
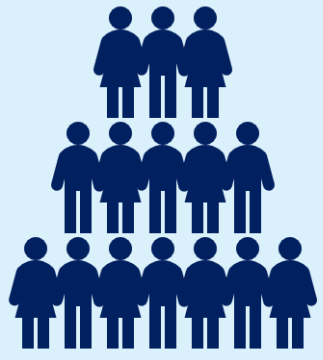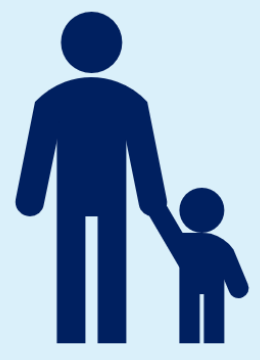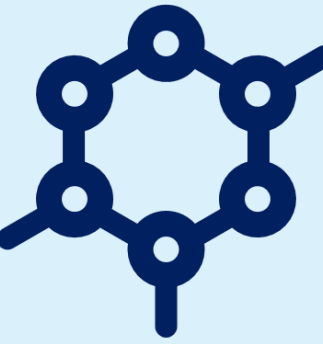
BACKGROUND & AIM

Guillain-Barré syndrome (GBS) is an acute neuropathy with a highly variable clinical course and outcome. The **International GBS Outcome Study (IGOS)** is a prospective multicenter cohort study that started in 2012 and included 2000 patients.

The objectives of IGOS are to:
- Better understand the cause of GBS and factors influencing disease course
- Improve the diagnostic criteria for early recognition of GBS
- Develop prognostic models to predict the final course of individual patients
- Stimulate the conduct of finding better treatments for GBS

STUDY POPULATION

- 2000 patients
- Median age: 52
  Number of children: 155 (8%)
- 60% men
- IVIg was provided to 71%
  10% received plasma exchange
- 57% had sensorimotor variant
- After one year, 86% of patients were able to walk

KEY FINDINGS AND CONCLUSIONS

Novel insights into disease pathways:
- We did not find an increase in inclusion rate in IGOS during the pandemics. This suggests that a strong association between SARS-CoV-2 and GBS is unlikely.
- *Campylobacter jejuni* was the most common preceding infection.
- Patients with GBS sometimes have infections from insect bites that carry viruses like Zika. This happens even when there isn't a widespread outbreak of the virus. However, the number of these infections in GBS patients is not noticeably higher than in people without GBS.
- High cerebrospinal fluid (CSF) protein level is associated with an early severe disease course and a demyelinating subtype.

Outcome prediction tools:
- We validated a tool to predict the inability to walk unaided at 4 and 26 weeks in patients with GBS; the mEGOS.
- We developed a region-specific version of mEGOS for Europe, North-America and Bangladesh.
- A simple and accurate tool (mEGRIS) was developed for predicting the risk of mechanical ventilation. (*Figure 1*)

Diagnostics, treatment and outcomes:
- Factors related to geography have a major influence on clinical subtypes, disease severity, diagnostics and outcome of GBS. (*Figure 2*)
- In patients with mild GBS, one course of IVIg did not improve the overall disease course, although further research is needed.
- There is extensive variation in the clinical practice of electro-diagnostic studies among IGOS centers.
- Residual symptoms were often present after one year, indicating the need for better treatments in GBS. (*Figure 3*)
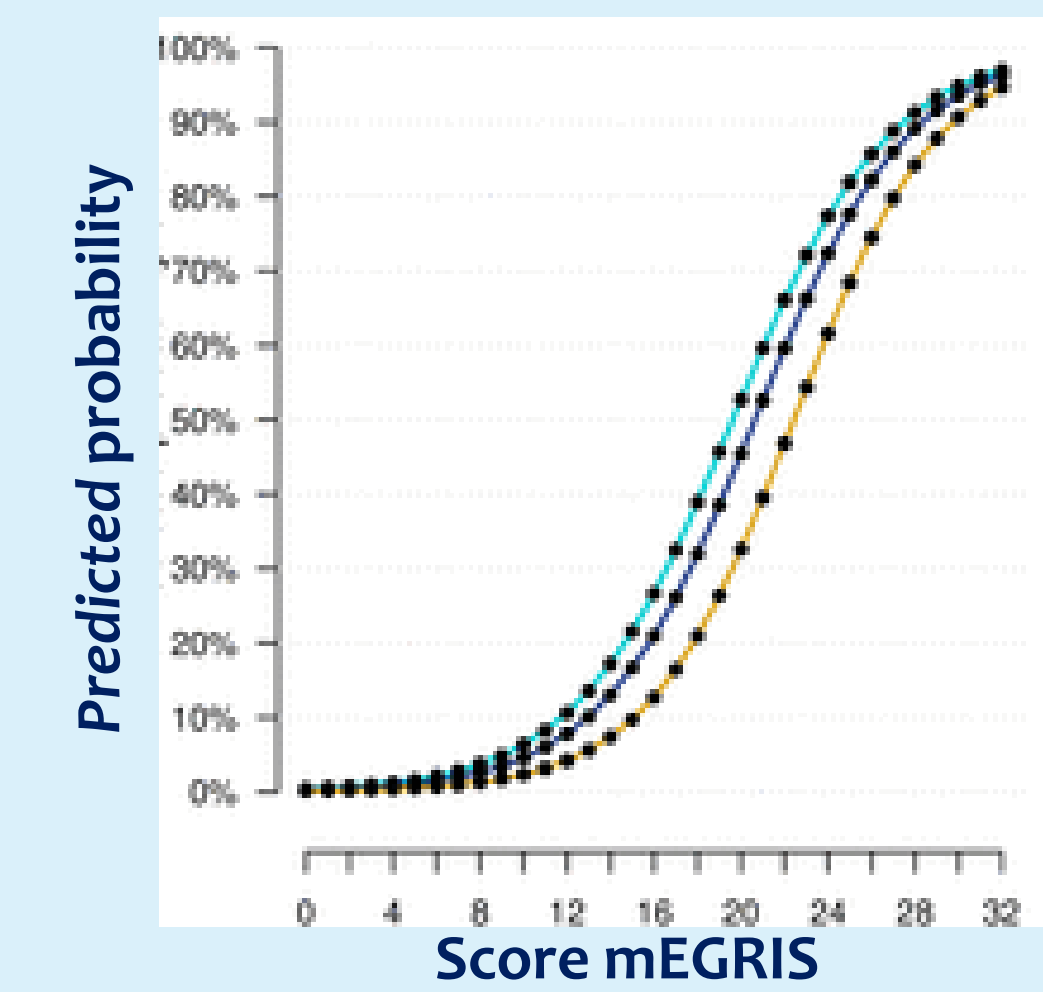
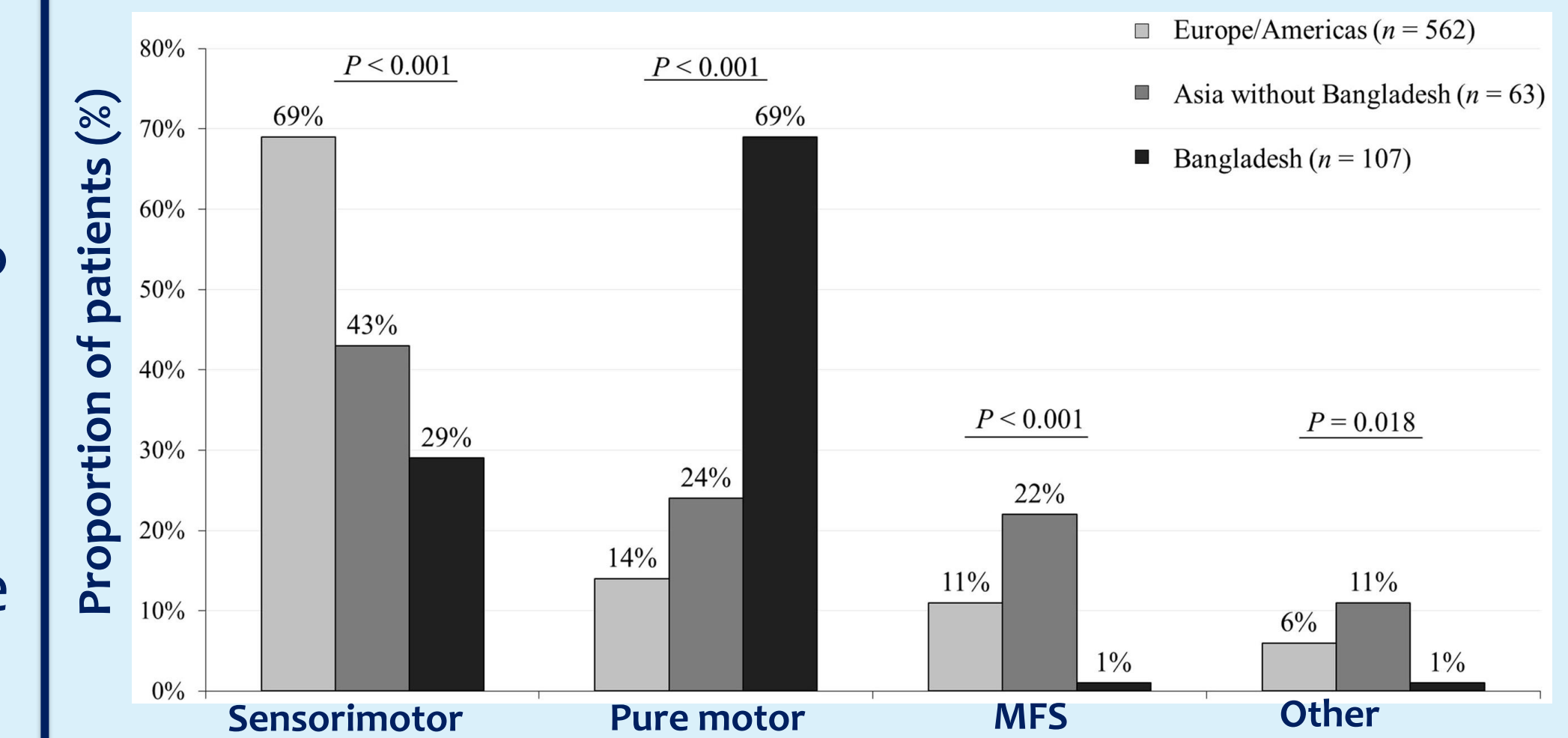*Figure 1: Predicted risk of mechanical ventilation by mEGRIS score*

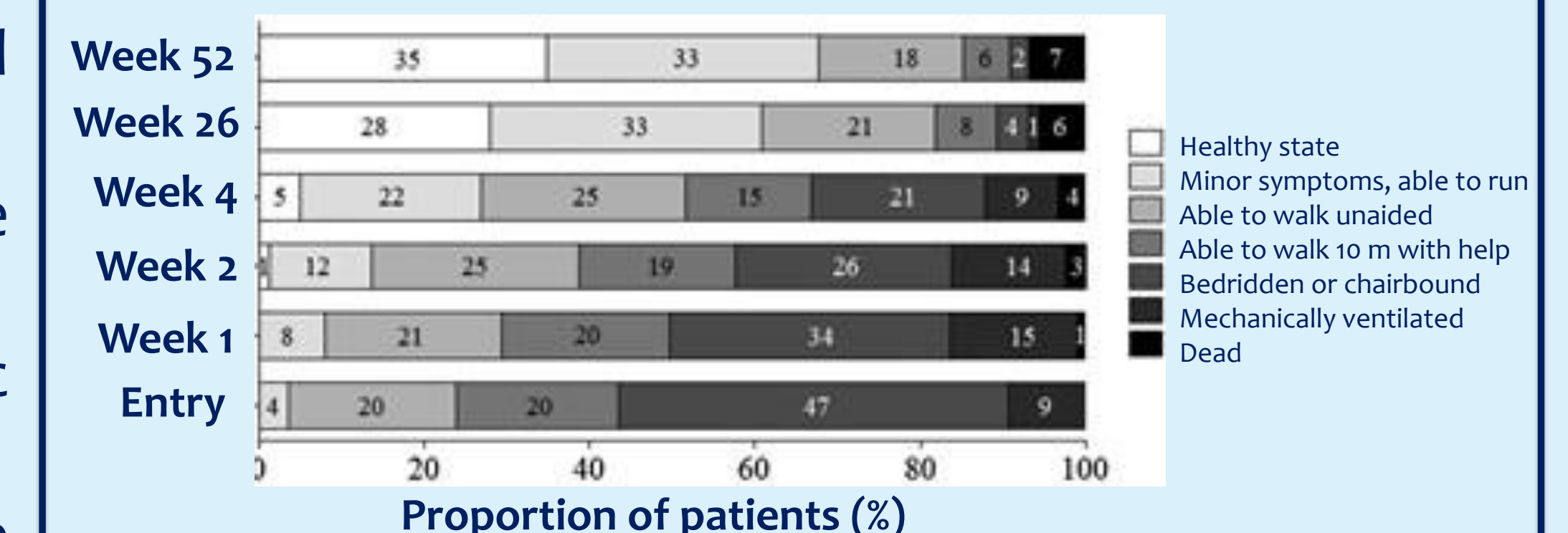*Figure 2: Type of GBS variant per geographical region*

Figure 3: Clinical course during 1-year follow-up

METHODS

Who could participate?
- Patients diagnosed with GBS within 2 weeks
- All ages, disease severities and GBS variants

What did we ask and collect?

We asked patients and their doctors about:
- Events before onset of neurological symptoms
- Symptoms experienced during disease course
- Nerve conduction studies
- Treatments provided (e.g. IVIg or plasmapheresis)
- Serum samples and DNA
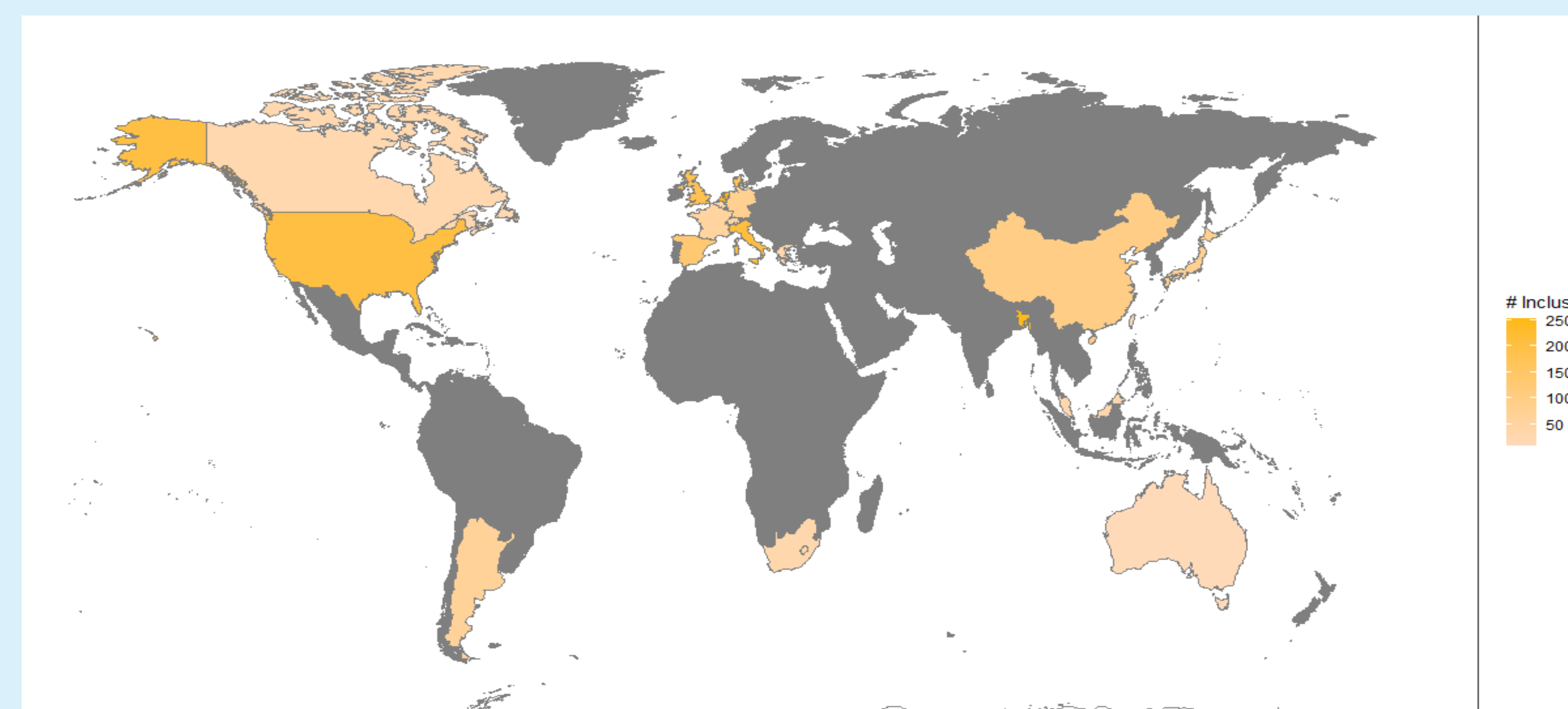- Outcomes at different time points

PARTICIPATING COUNTRIES

Figure 4: Overview of participating countries and inclusions per country

DID YOU KNOW...

- **The IGOS consortium** consists of researchers and clinicians from **>160 centers in 21 countries.**
- The IGOS Consortium has published **16 manuscripts**, with currently 21 additional studies in progress.
- We have enrolled 2000 patients worldwide and finalized 1-year follow-up in all patients. The most recently included participants are still under 3-year follow-up observation until May 2024.
- We are working on a protocol for IGOS 2.0.
- You can read all publications here.

www.gbsstudies.erasmusmc.nl/publications