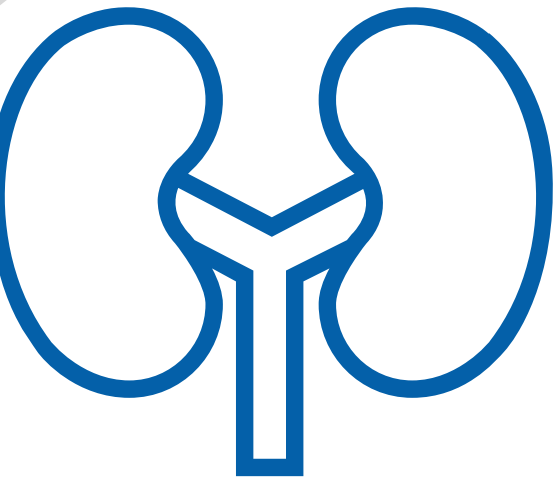


# Work, Productivity, and Activity Impairment in Patients with Immunoglobulin A Nephropathy: Results from a Real-world Study

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## Introduction

- Immunoglobulin A nephropathy (IgAN) is the most common form of primary glomerulonephritis worldwide, with an estimated annual incidence of 25 per million<sup>1</sup>.
- IgAN patients present with numerous clinical manifestations, commonly including hematuria, proteinuria, and hypertension<sup>2</sup>; which may have a negative impact on patients' quality of life and may lead to high economic burden<sup>3</sup>.
- Limited data are available on the impact of IgAN in terms of work, productivity, and activity impairment in the real-world setting. To address this gap, we conducted this real-world study.
- The aim of this analysis was to assess the socioeconomic burden in patients with IgAN using the work, productivity, and activity impairment (WPAI) questionnaire.

## Methods

- Real-world data were drawn from the Adelphi IgAN Disease Specific Programme (DSP), a point-in-time survey of IgAN-treating nephrologists and their patients in the United States (US), EU5 (France, Germany, Italy, Spain, and the United Kingdom), Japan and China between June and October 2021.
- The DSP methodology has been published previously in detail<sup>4</sup>.
- Ethics exemption was obtained from the Pearl Institutional Review Board and Hospital Clínic de Barcelona.
- Nephrologists completed structured online records for successive patients presenting with IgAN, including clinical characteristics and patients' insurance coverage.
- Patients completed a voluntary self-completion (PSC) form capturing patient-reported outcomes, including the WPAI general health questionnaire.
- The WPAI questionnaire was used to assess work time missed, impairment at work, overall work impairment and activity impairment in patients with IgAN and presented data by proteinuria levels (P1: <1 g/day; P2: ≥1 g/day).
- The analyses were descriptive.

## Results

- Nephrologists completed record forms for 883 patients, with known proteinuria at the time of survey (US n=67, EU5 n=176, Japan n=98, China n=542). However, not all patients completed every aspect of the WPAI on the PSC form.
- Mean patient age was 42 years, and 56% were male (**Table 1**).
- Mean time from IgAN diagnosis (with biopsy or other method) to the time of survey was 3.3 years (US: 4.0, EU5: 5.0, Japan: 4.2, China: 2.5) (**Table 1**).
- At the time of survey, 37% (327/883) of patients had proteinuria ≥1 g/day (US: 66% [44/67], EU5: 43% [76/176], Japan: 16% [16/98], China: 35% [191/542]) (**Table 1**).

## Conclusions

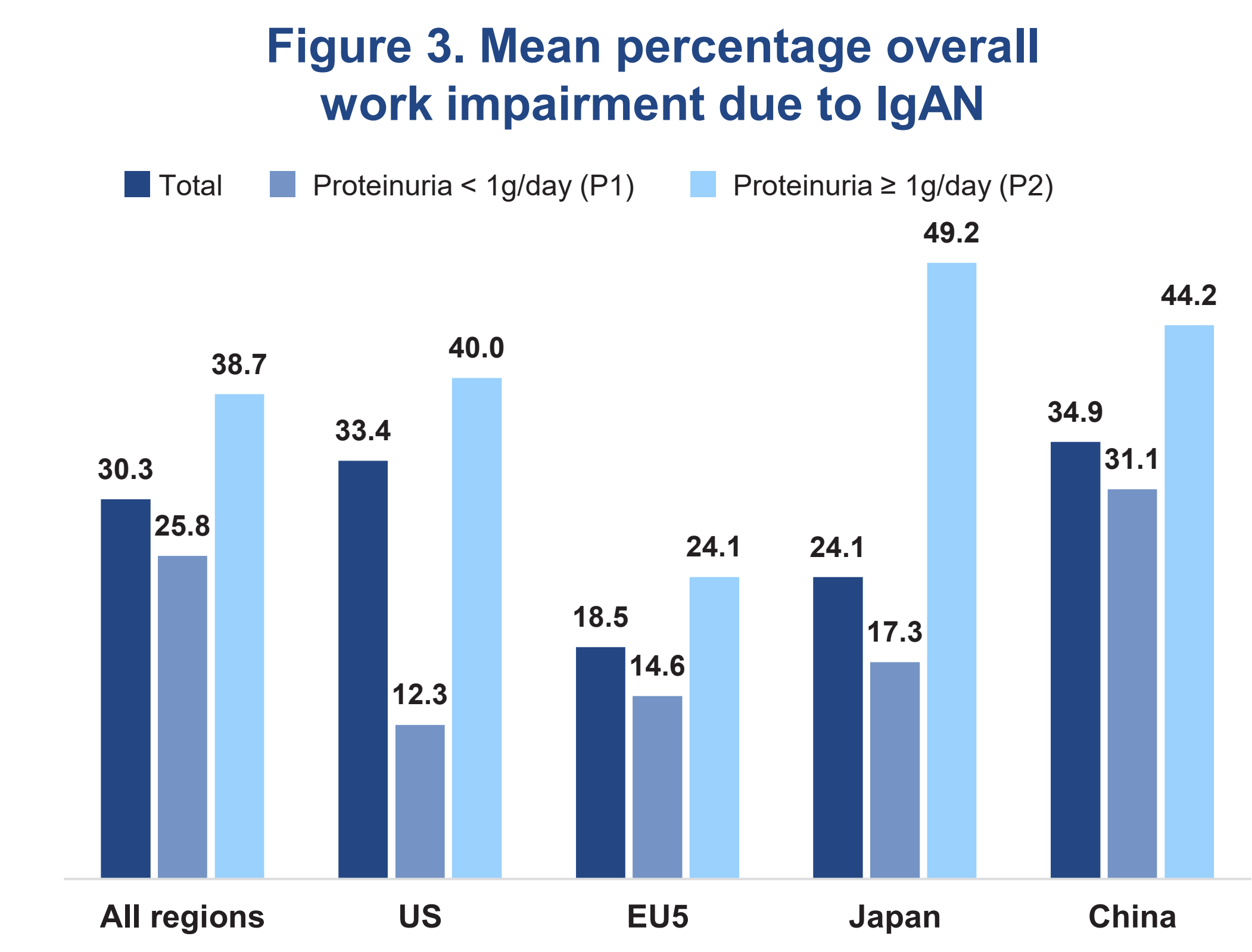
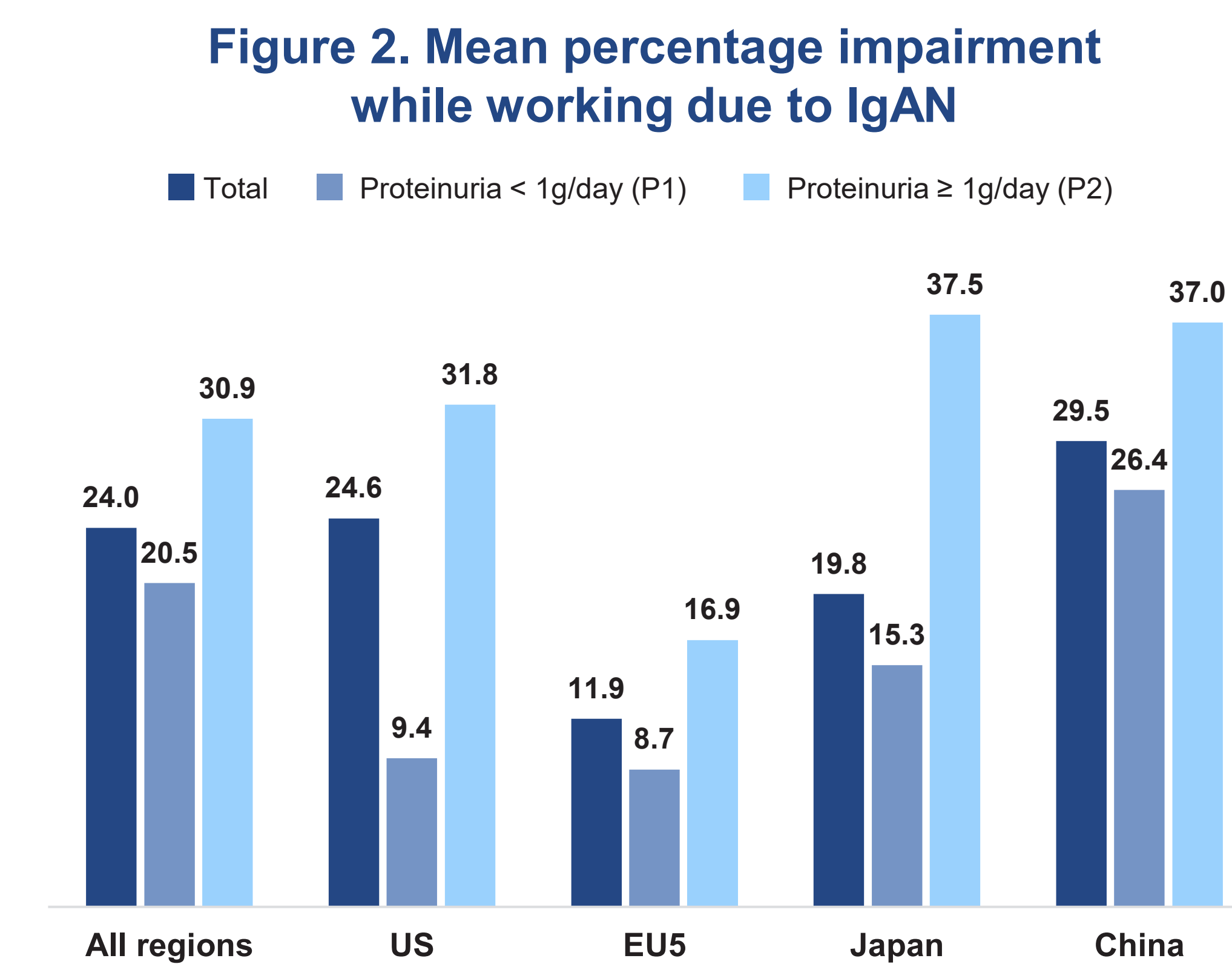
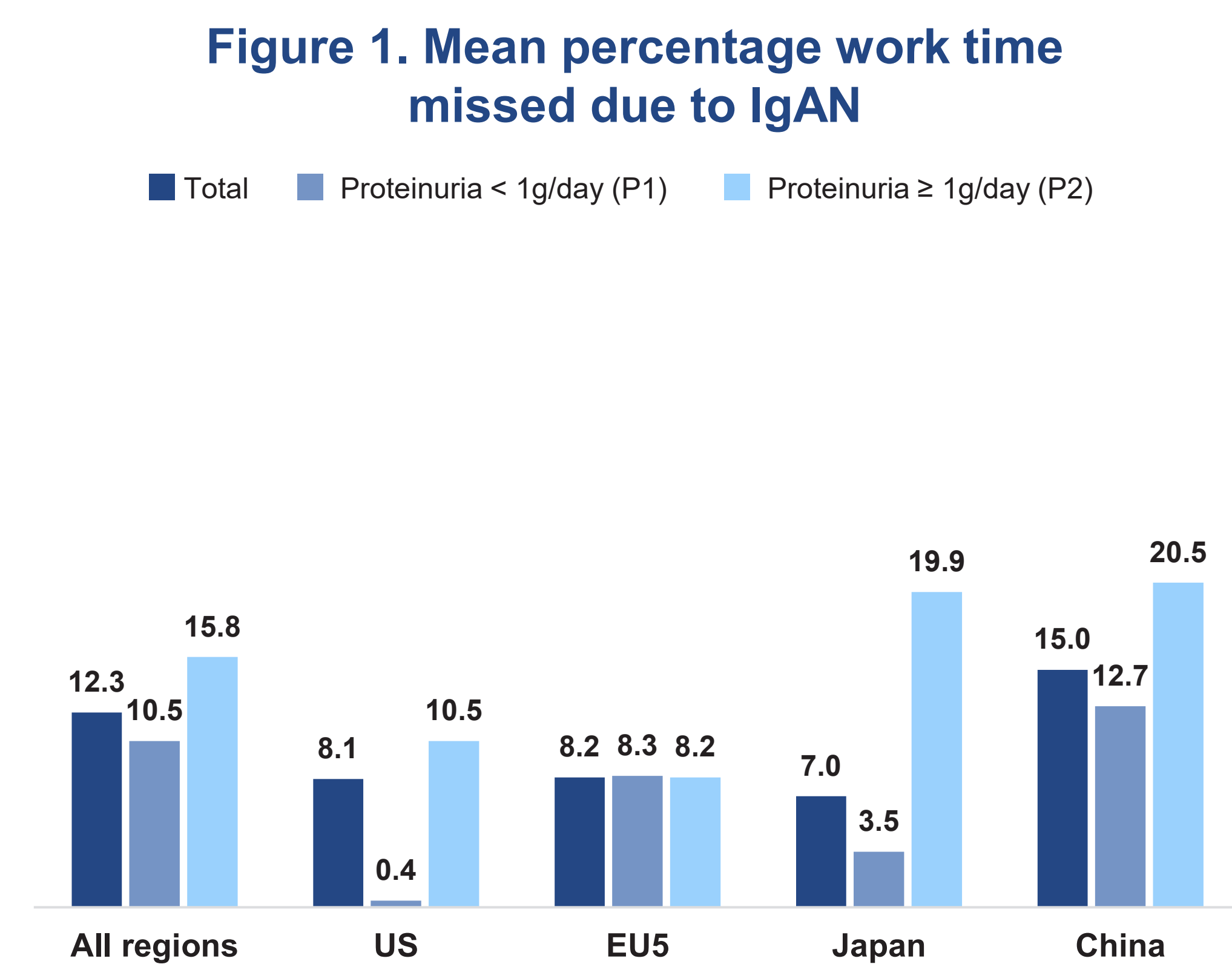
- This study highlights the socioeconomic burden in terms of work and activity impairment associated with IgAN across various geographies.
- Patients with proteinuria ≥1 g/day had higher work time missed and impairment while working or performing daily activities than patients with proteinuria < 1 g/day. This indicates that poorer disease control, reflected in elevated proteinuria, is associated with a greater WPAI burden, highlighting the need for better management.
- Although this study did not report WPAI outcomes according to treatment received, the study results suggest new therapies that improve the control of IgAN could have benefits on patients abilities to work and perform their usual activities.

## Results

**Table 1. Demographics, socioeconomic burden and insurance coverage in patients with IgAN by various geographies**

|                                                               | All regions  |              |              | US           |              |              | EU5          |              |              | Japan        |              |              | China        |              |              |
|---------------------------------------------------------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|
|                                                               | Total        | <1 g/day*    | ≥1 g/day **  | Total        | <1 g/day*    | ≥1 g/day **  | Total        | <1 g/day*    | ≥1 g/day **  | Total        | <1 g/day*    | ≥1 g/day **  | Total        | <1 g/day*    | ≥1 g/day **  |
| Number of patients, N                                         | 883          | 556          | 327          | 67           | 23           | 44           | 176          | 100          | 76           | 98           | 82           | 16           | 542          | 351          | 191          |
| Age, mean (SD)                                                | 41.9 (13.99) | 40.1 (13.45) | 45.0 (14.34) | 43.2 (12.76) | 41.6 (10.18) | 44.1 (13.95) | 44.5 (13.43) | 41.1 (12.16) | 49.0 (13.79) | 48.2 (15.03) | 48.1 (15.23) | 48.6 (14.40) | 39.8 (13.64) | 37.8 (12.81) | 43.4 (14.39) |
| Male patients, n (%)                                          | 492 (56%)    | 299 (54%)    | 193 (59%)    | 33 (49%)     | 11 (48%)     | 22 (50%)     | 119 (68%)    | 68 (68%)     | 51 (67%)     | 40 (41%)     | 33 (40%)     | 7 (44%)      | 300 (55%)    | 187 (53%)    | 113 (59%)    |
| Number of patients, N                                         | 850          | 542          | 308          | 66           | 23           | 43           | 162          | 96           | 66           | 88           | 74           | 14           | 534          | 349          | 185          |
| Time from diagnosis to survey, mean (SD), Years               | 3.3 (4.19)   | 3.4 (4.23)   | 3.2 (4.11)   | 4.0 (5.70)   | 5.4 (6.55)   | 3.3 (5.13)   | 5.0 (5.86)   | 5.0 (5.95)   | 5.1 (5.76)   | 4.2 (4.30)   | 4.4 (4.45)   | 3.2 (3.31)   | 2.5 (2.98)   | 2.6 (3.08)   | 2.5 (2.81)   |
| <b>Unemployed/on long term sick leave/retired due to IgAN</b> |              |              |              |              |              |              |              |              |              |              |              |              |              |              |              |
| Number of patients, N                                         | 198          | 105          | 93           | 6            | 3            | 3            | 30           | 13           | 17           | 12           | 11           | 1            | 150          | 78           | 72           |
| Yes, n (%)                                                    | 66 (33.3%)   | 33 (31.4%)   | 33 (35.5%)   | 1 (16.7%)    | 0 (0.0%)     | 1 (33.3%)    | 2 (6.7%)     | 2 (15.4%)    | 0 (0.0%)     | 1 (8.3%)     | 1 (9.1%)     | 0 (0.0%)     | 62 (41.3%)   | 30 (38.5%)   | 32 (44.4%)   |
| <b>Health insurance covering IgAN treatment</b>               |              |              |              |              |              |              |              |              |              |              |              |              |              |              |              |
| Number of patients, N                                         | 883          | 556          | 327          | 67           | 23           | 44           | 176          | 100          | 76           | 98           | 82           | 16           | 542          | 351          | 191          |
| Yes, n (%)                                                    | 775 (87.8%)  | 490 (88.1%)  | 285 (87.2%)  | 55 (82.1%)   | 17 (73.9%)   | 38 (86.4%)   | 137 (77.8%)  | 80 (80.0%)   | 57 (75.0%)   | 68 (69.4%)   | 57 (69.5%)   | 11 (68.8%)   | 515 (95.0%)  | 336 (95.7%)  | 179 (93.7%)  |

**Abbreviations:** EU5: France, Germany, Italy, Spain, and the United Kingdom; IgAN: Immunoglobulin A nephropathy; \* Proteinuria <1g/day; \*\* Proteinuria ≥1g/day; SD: Standard Deviation; US: United States; WPAI: Work, productivity, and activity impairment



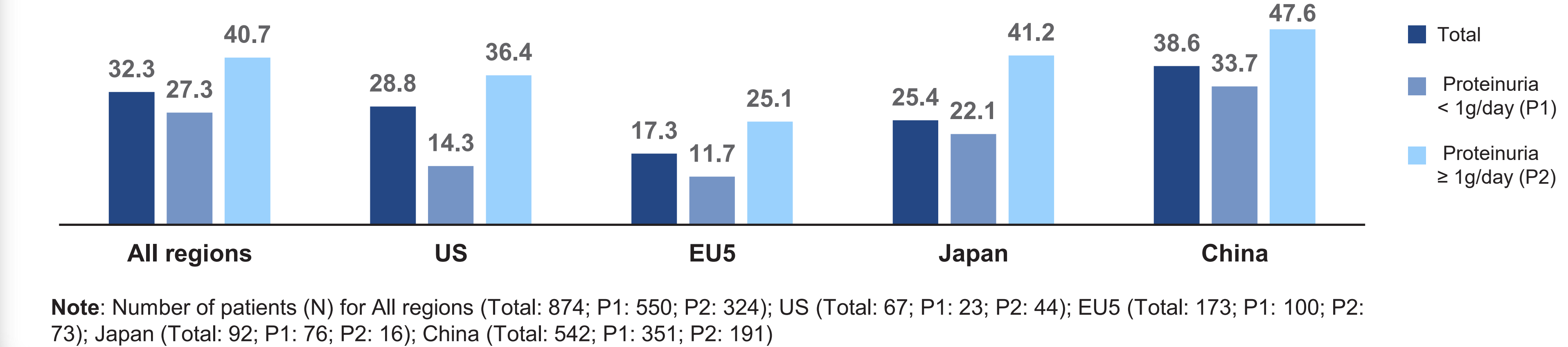
## Results

### Socioeconomic Burden

Across all geographies, patients with proteinuria ≥1 g/day (P2) reported a higher overall work and activity impairment than those with proteinuria <1 g/day (P1) except work time missed among patients of EU5 region.

- Work time missed:** Overall, patients-reported a mean of 12.3% work time missed due to IgAN; highest among patients in China (15.0%) and lowest among patients in Japan (7.0%) (**Figure 1**).
- Impairment while working:** Mean percentage impairment while working due to IgAN was 24.0%. The impairment was higher among patients in China (29.5%), followed by the US (24.6%), Japan (19.8%), and EU5 (11.9%) (**Figure 2**).
- Overall work impairment:** Overall, mean percentage work impairment due to IgAN was 30.3%. Patients in China reported the highest overall work impairment (34.9%), and lower impairment was reported in the EU5 patients (18.5%) (**Figure 3**).
- Impairment of daily activities:** Overall, mean percentage impairment of daily activities due to IgAN was 32.3%. Patients in China reported a higher impairment (38.6%), and lower impairment was reported in EU5 patients (17.3%) (**Figure 4**).
- Overall, patients in China reported a higher WPAI compared with patients in other geographies.
- Out of 198 patients who were unemployed, on long-term sick leave, or retired, 33.3% (n = 66) were not working due to their IgAN. A higher proportion of patients in China (41.3%) reported not working due to IgAN compared with those in the US (16.7%), Japan (8.3%), and EU5 (6.7%) (**Table 1**).
- At the time of survey, 87.8% of respondents had health insurance coverage for IgAN treatment. Patients in China had the highest health insurance coverage for IgAN treatment (95.0%), followed by patients in the US (82.1%), EU5 (77.8%), and Japan (69.4%) (**Table 1**).

**Figure 4. Mean percentage daily activity impairment due to IgAN**



## Limitations

- Patients included in this study were successive patients presenting with IgAN in the nephrologist's practice; therefore, it is not a truly random sample and may not truly represent the overall population of patients.
- The data are subject to reporting accuracy of physicians and patients which may be subjected to recall bias.
- This study enrolled patients for a limited period of time (June to October 2021) and included patients from only few countries.

### Disclosures

- Data collection for the DSP was undertaken by Adelphi Real World as part of an independent survey and data is owned by Adelphi. Novartis is one of multiple subscribers to the DSP and supported this analysis.
- Richard Lafayette has received research funding from NIH, UMMichigan, Omeros, Vera, Travere, Pfizer, Roche, Chinook, Alexion, Otsuka, Calliditas and NephroNet. He has provided consultancy for Alexion, Omeros, Vera, Travere, Pfizer, Roche, Calliditas, Chinook, Aurinia, GSK, Otsuka and Novartis.

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### Acknowledgments

The authors acknowledge **Vilas Maroti Belekar** (Novartis, Hyderabad) for preparing the poster content and **Venkata Setty Ch** (Novartis, Hyderabad) for designing the poster layout. The final responsibility for the content lies with the authors.



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