Burden of All-cause and Norovirus-associated Medically Attended Acute Gastroenteritis Among Adults with Underlying Medical Conditions in Germany, 2015–2024

BACKGROUND

Norovirus is a common cause of stomach illness. It can lead to symptoms like vomiting and diarrhea. In adults, this illness can be serious enough to need medical care. Older adults and people with certain health conditions may have a higher risk of severe illness. This study looked at how often adults in Germany needed outpatient care or hospital care for acute gastroenteritis (AGE), including illness related to norovirus, from 2015 to 2024.

OBJECTIVE

The goal of this study was to estimate how often medically attended AGE and norovirus-related AGE occurred in adults in Germany. The study also looked at differences by age group and by whether adults had underlying medical conditions.

METHODS

The study used health insurance claims data from the InGef database in Germany. This database included de-identified records from more than 10 million Germans. Records from July 1, 2015, to June 30, 2024 were reviewed. All-cause AGE and diagnosed norovirus AGE encounters were counted if they occurred at least 14 days apart. A modeling method was also used to estimate norovirus cases that may not have been directly coded as norovirus. Rates were compared by age, healthcare setting, and selected medical conditions.

RESULTS

The study found nearly 6 million AGE encounters and 35,876 diagnosed norovirus AGE encounters. The model suggested that many norovirus cases were not identified in claims data, with about 16% of AGE cases without a known cause likely linked to norovirus. This suggests there were about 27 additional norovirus cases for every 1 diagnosed case.

Hospital AGE rates were highest in adults aged 80 years and older, while outpatient AGE rates were highest in adults aged 18 to 59 years. The same pattern was seen for norovirus AGE. Hospital cases were most common from November to March, especially in adults aged 75 years and older, and outpatient cases peaked in December–January.

Adults with underlying medical conditions had higher norovirus AGE rates than those without these conditions. Rates were highest in people with blood disorders, diabetes, and immunocompromising conditions. Across these condition groups, rates were also higher in younger adults.

CONCLUSIONS

There is a large burden of norovirus AGE among adults in Germany. Younger adults had the highest outpatient rates, while older adults had the highest hospital rates. Many norovirus cases may be missed when only diagnosis codes are used, which underestimates the true burden. Adults with underlying medical conditions had higher rates of illness, highlighting the need for targeted prevention in high-risk groups.

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Christine Kim, PhD, MSPH[1]; Worku B. Ewnetu, PhD[2]; Scott A. McDonald, PhD[2]; Wen-Hsing Wu, MS[1]; Chukwuemeka Onwuchekwa, MBBS, MSc[2]; Mikel Esnaola, MSc, PhD[2]; Jehidys Montiel, MSc, PhD[2]; Raeleesha Norris, MPhil[4]; Vukašin Višković, MA[4]; Brandon J. Patterson, PharmD, PhD[1]; Jennifer Radin, PhD, MPH[1]; Julia M. Baker, PhD, MPH[3]; Stefan Scholz, PhD, MPH[5]; Cornelia Voigt, PhD[5]; Shehzad M. Iqbal, PhD, MBA[1]; Katherine B. Carlson, PhD, MPH[1]

[1]Moderna, Inc., Cambridge, MA, United States; [2]P95 Clinical and Epidemiology Services, Leuven, Belgium; [3]Epidemiologic Research & Methods, LLC , United States; [4]InGef - Institute for Applied Health Research Berlin GmbH, Berlin, Germany; [5]Moderna Germany GmbH, Munich, Germany

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Moderna, Inc.
325 Binney Street
Cambridge, MA 02142, MA

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