

HUMAN H1-ANTIHISTAMINE EXPOSURES REPORTED TO THE POISONS INFORMATION CENTRE ERFURT FROM 2007 TO 2016

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Objective

In Germany, the use of first-generation H1-antihistamines (FGH1AH) in children under the age of 3 years is criticised by the Federal Institute for Drugs and Medical Devices (Bundesinstitut für Arzneimittel und Medizinprodukte, BfArM) for a higher risk of experiencing adverse effects and in adults for the risk of abuse and performing suicide attempts [1, 2]. In this context, we investigated all human H1-antihistamine exposures registered by the Poisons Information Centre (PIC) Erfurt for differences between first-, and second-generation H1-antihistamines (SGH1AH).

Methods

The changes in frequencies, circumstances of exposure, symptoms, symptom severity, age groups, and substances involved in all H1-antihistamine related enquiries to the PIC Erfurt were analysed retrospectively from the beginning of 2007 to the end of 2016 and compared between FGH1AH and SGH1AH exposures.

Results

In total, 4371 cases of H1-antihistamine exposures were registered. Cases of FGH1AH (in total 4013) and SGH1AH (in total 324) exposures increased from 364 and 22 cases in 2007 to 430 and 47 in 2016, respectively (Fig. 1).

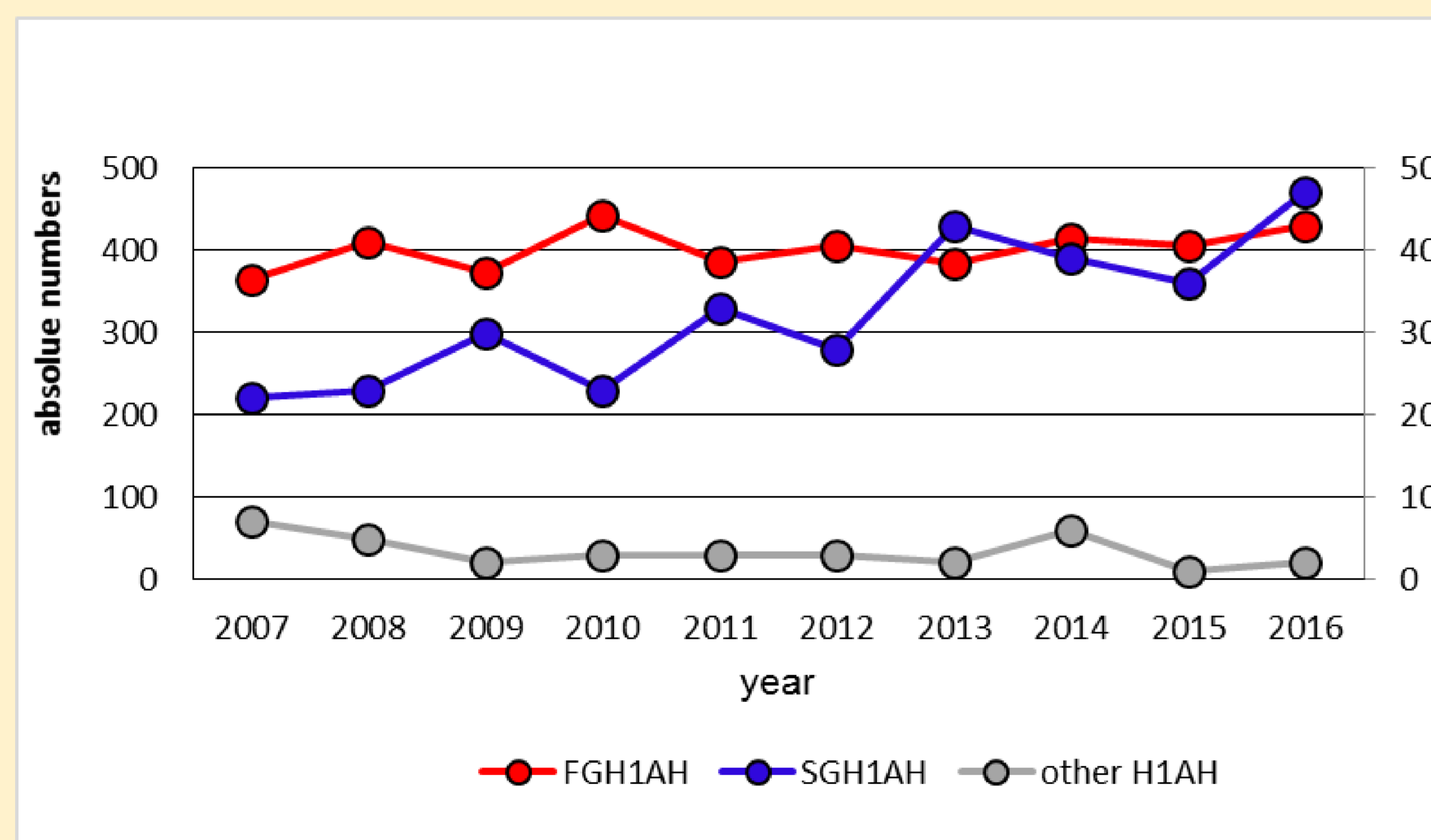


Fig. 1 Absolute numbers of FG1AH, SGHA1AH, and other H1AH exposures registered by the PIC Erfurt from the beginning of 2007 to the end of 2016.

In FGH1AH cases diphenhydramine (1258) and promethazine (992) and in SGH1AH cases cetirizine (193) and loratadine (85) most frequently were involved.

Age groups in FGH1AH exposures were more often adults (78.1%) and less frequently children (21.8% (toddlers 4.1%)) compared to SGH1AH exposures (adults 27.8%; children: 72.2% (toddlers 15.2%)) (Fig. 2).

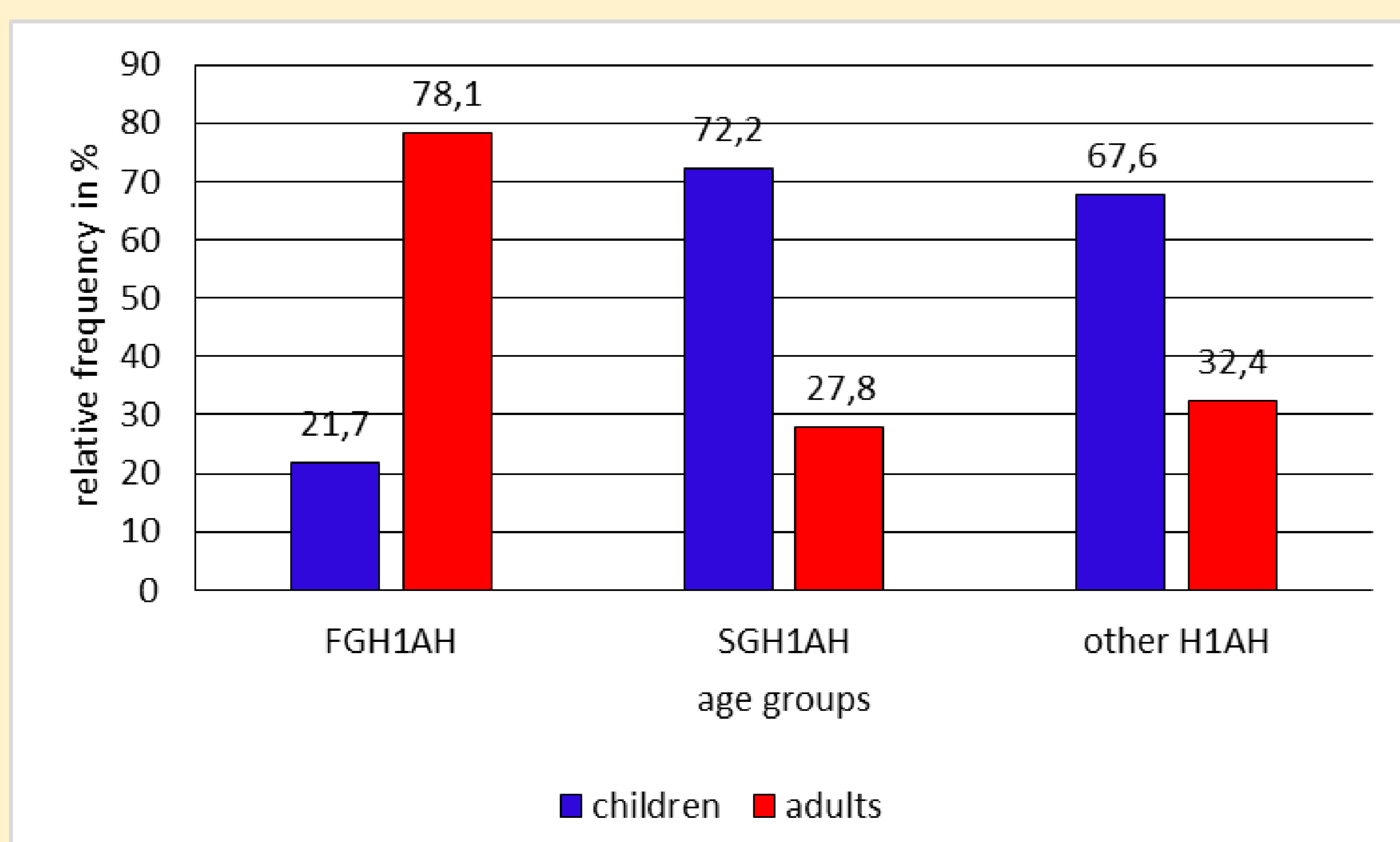


Fig. 2 Relative frequencies of age groups in FGH1AH, SGH1AH, and other H1AH exposures registered by the PIC Erfurt from the beginning of 2007 to the end of 2016.

The proportion of exposures in abuse and suicidal intention was higher in FGH1AH (2.9% and 62.0%) than in SGH1AH (0% and 24.1%), whereas the proportion of accidental exposures was lower (13.5% versus 58.6%) (Fig. 3).

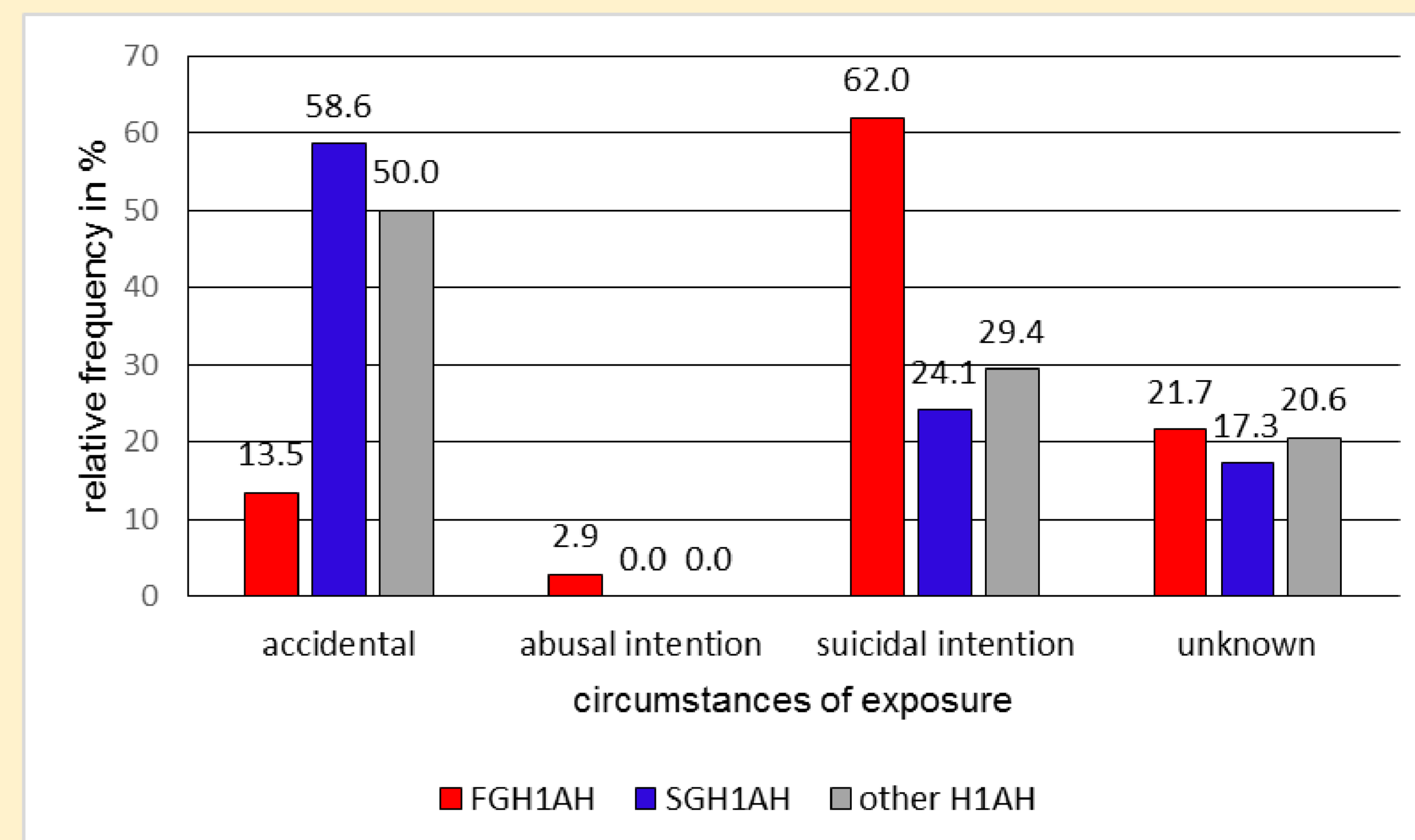


Fig. 3 Relative frequencies of circumstances of FGH1AH, SGH1AH, and other H1AH exposures registered by the PIC Erfurt from the beginning of 2007 to the end of 2016

FGH1AH exposures were more often symptomatic than SGH1AH (mild: 48.2% versus 22.8%; moderate (17.6% versus 3.4%), severe 3.4% versus 0.3%). The most cases with moderate (24.7%) and severe (5.6%) symptoms were caused by diphenhydramine (Fig. 4).

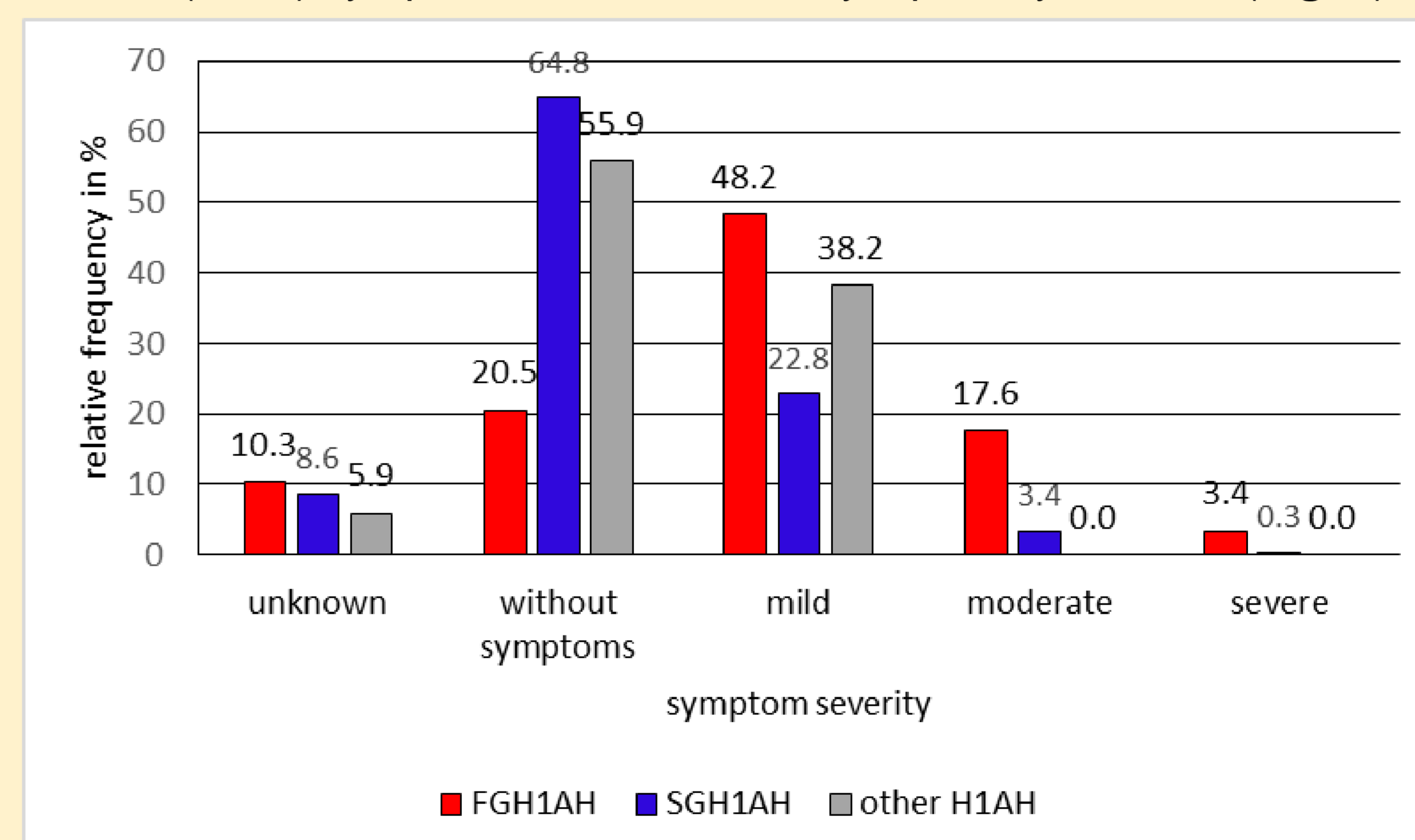


Fig. 4 Relative frequencies of symptom severity in FGH1AH, SGH1AH, and other H1AH exposures registered by the PIC Erfurt from the beginning of 2007 to the end of 2016

Conclusion

- In our study we could observe an increase of human FGH1AH and SG1AH exposures from 2007 to 2016.
- Cases with moderate or severe symptoms were mainly caused by FGH1AH in abuse or in suicidal attempts.
- At least the warning of the BfArM about the risk of abuse or use of FGH1AH in suicidal attempts is supported by our data.

References

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2. Missbrauch der Antihistaminika Diphenhydramin und Dimenhydrinat [INTERNET]. Berlin: Nebenwirkungen. Arznei-telegramm; 2016 Apr 20 [cited 2017 Sep 09]; [about 1 screen. Available from: https://www.arznei-telegramm.de/html/sonder/1604040_02.html