Evaluation of gender-specific differences in course of disease of pediatric patients with Inflammatory Bowel Disease based on the CEDATA-GPGE®-patient registry

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Conflict of interests: none declared

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Introduction:

The CEDATA-GPGE® registry collects disease features of over 5000 children and adolescents with inflammatory bowel disease since 2004 (1). **Currently, projects to improve patient care and patient/family empowerment are under way supported by German federal innovations funds(CEDKQN).** The presented analysis aims to identify differences in the presentation and course of disease between male and female patients.

Methods:

All children included were grouped by gender, diagnosis and age classes. The groups were compared at initial presentation, localization and disease course, as well as Tanner puberty stage. Therapy and response is compared between boys and girls.

Results:

1510 patients were registered with CEDATA-GPGE® registry within three months after diagnosis and had at least one follow-up documentation within 14 days of registration, thus were included into the analysis (Fig 1). In the Crohn's disease group significantly more patients were male (p=0,007), while significantly more patients with Ulcerative Colitis were female (p<0,05) (Fig 2). Gender-specific differences were observed at initial presentation: Female CD-patients between the ages of 0 to 9 years presented with blood in the stool significantly more often than male CD-patients in the same age group (34,91% vs. 55,70%, p=0,0030) (Fig 3). Abdominal pain was significantly more frequent in female CD-patients between 10 and 16 years than in male CD-patients of the same age group (71,79% vs. 81,03%, p=0,0021). Further initial symptoms are listed in Table 1.

Pubertal development was significantly delayed in both sexes(Fig 4).

Differences were also observed in the initial disease location and disease course: Male CD-patients were diagnosed with disease location in the terminal ileum and colon with simultaneous affection of the upper gastrointestinal tract (Paris-Classification L3L4a) significantly more often than female CD-patients (31,42% vs. 22,86%, p=0,004) (Fig 5). **Additionally penetrating disease behaviour with perianal disease (B3p) was significantly more frequent in male CD-patients (3,05% vs. 1,04%, p=0,0397, Fig 6).** In patients with Ulcerative Colitis male patients suffered from pancolitis (Paris Classification E4) significantly more frequently than female UC-patients at initial presentation (59,73% vs. 49,55%, p=0,0304) (Fig 7) (2). Gender-specific differences could also be found in the course of therapy: In the second year following initial treatment (therapy duration 451–810 days) male patients were treated with azathioprine significantly more frequently than female CD-patients (28,64% vs. 23,40%, p=0,0212). The share of patients on biologics increased in both sexes over time (Fig 8)

Initial symptoms		Growth Failure	Loss of appetite	Nausea	Diarrhea	Fever	Weight-loss	Anemia
Male age groups	A1a n=170	**12,9%**	**19,4%**	0,6%	70,6%	**12,9%**	**45,3%**	22,9%
	A1b n=653	8,3%	**19,9%**	**2,0%**	71,8%	11,2%	**54,7%**	22,4%
Female age groups	A1a n=147	6,8%	**21,1%**	0,7%	74,8%	**14,3%**	36,7%	**31,3%**
	A1b n=482	7,3%	16,6%	**1,9%**	69,5%	13,5%	**51,2%**	24,7%

Tab 1: Initial symptoms by age groups (A1a: 0 to 9 yrs; A1b: 10 to 16 yrs)

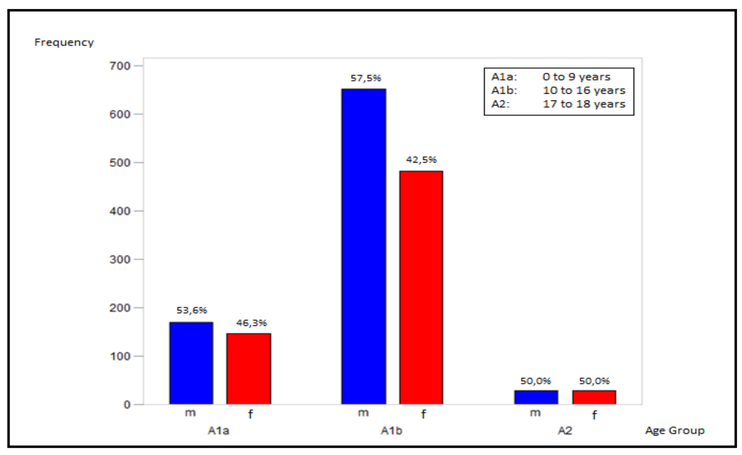

Fig 1: Age groups separated by gender

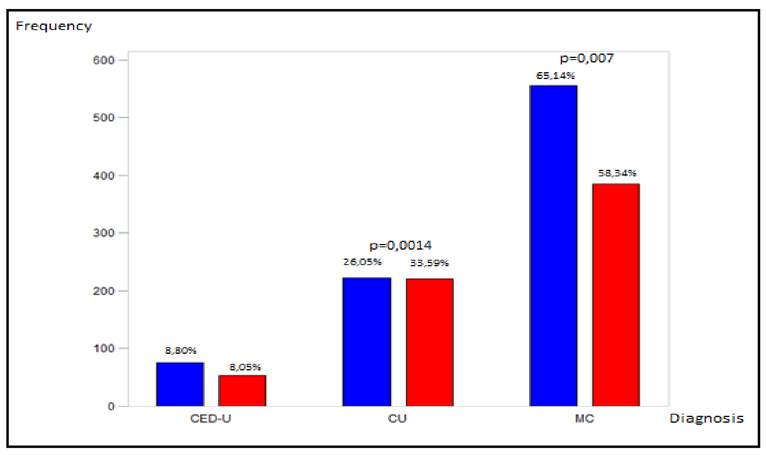

Fig 2: Diagnosis groups by gender

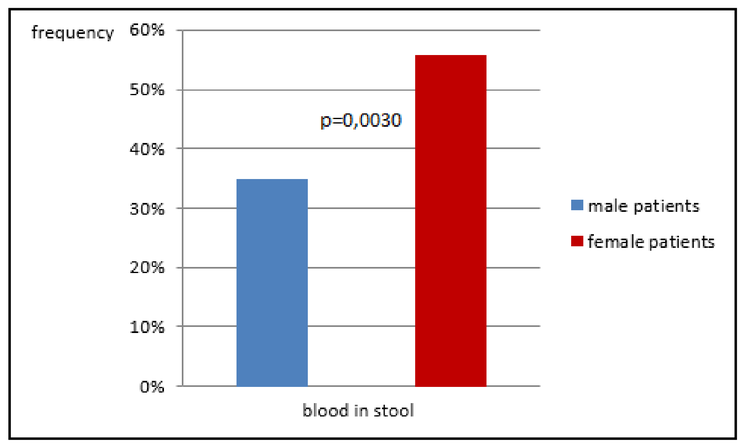

Fig 3: CD-girls at <10 years present more often with blood in stool

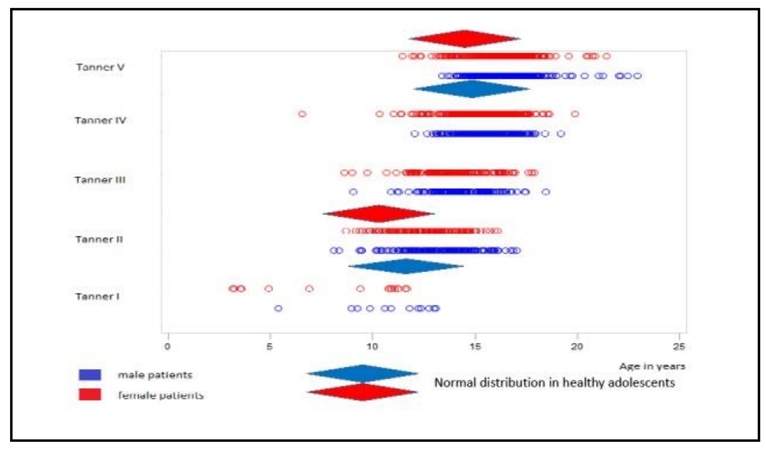

Fig 4: Tanner PH puberty stage (both sexes significantly delayed, n.s. between sexes)

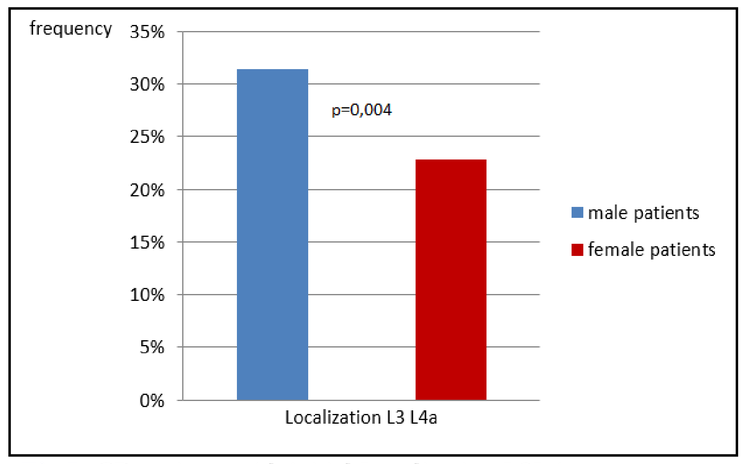

Fig 5: CD-patients with initial Localization L3L4a

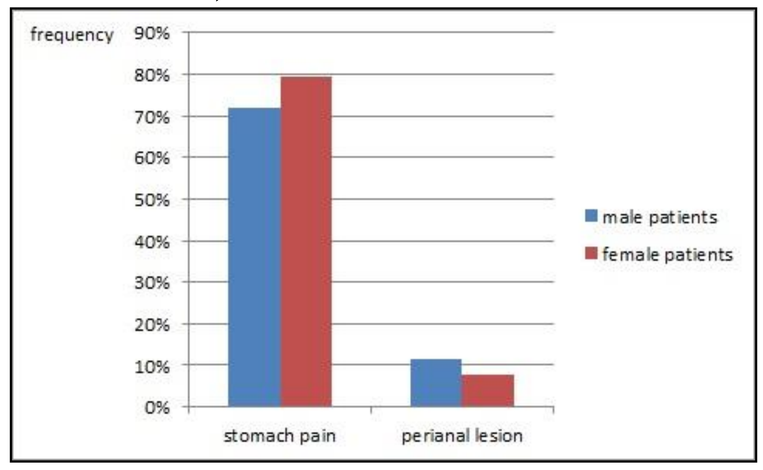

Fig 6: CD Patients - Differences in initial symptoms

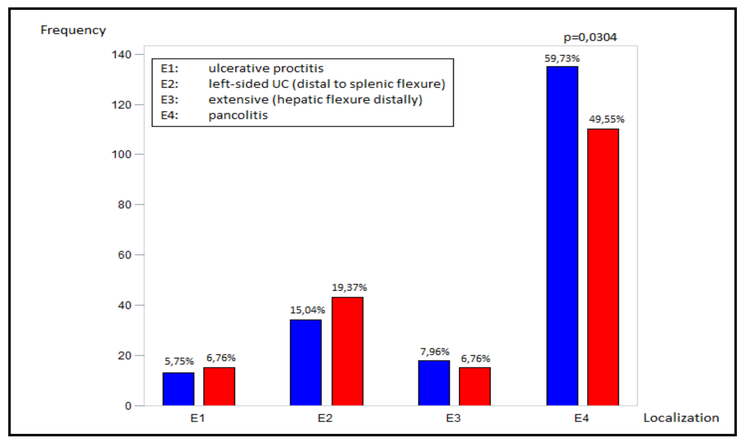

Fig 7: Initial Pancolitis occurs more often in UC boys

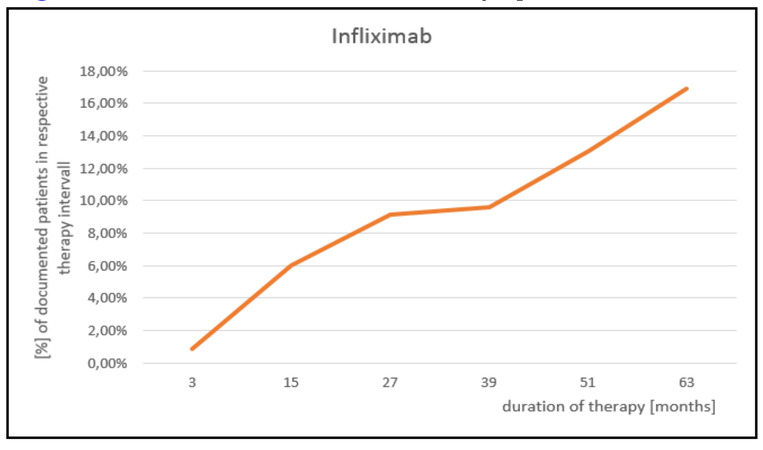

Fig 8: Percentage of documented patients treated with Infliximab

Conclusion:

Gender associated differences in pediatric IBD have an impact on the course of disease. Further studies especially on the influence of gender on response to and side effects of therapy are needed as they may have impact on therapeutic decisions.

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