**Is the incidence of paediatric inflammatory bowel disease still increasing?**

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Conflicts of interest

The authors declare no conflicts of interest

Contributorship

JJA and RMB conceived the study. JJA and MC collected the data, JJA analysed the data with help from all authors. JJA and RMB wrote the manuscript with help from all authors.

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There has been an increase in the incidence of paediatric inflammatory bowel disease (IBD) over the last 20 years [1,2]. We have previously published data from Wessex, England reporting an incidence of 9.37/100,000/year ((2008-12), significantly increased from 5.2/100,000/year in 1998-99, 6.39/100,000/year in 2002-06 and 7.82/100,000/year in 2003-08 [1,2]. We now report the most recent disease incidence figures for Wessex, England (01/01/2013 to 31/12/2017) and analyse them with previously published Wessex data (01/01/2002 to 21/12/2012) demonstrating the most contemporary incidence and the trend over 16 years. The ‘Wessex’ population was estimated from the Office for National Statistics (ONS) using defined postcodes, based on the contemporary referral area [1,3]. Statistical analysis of the data were conducted using Pearson’s χ2 test, Mann-Whitney U-test and by simple linear regression (SPSS 24, IBM).

From 2002-2017 there was a significant positive trend in PIBD incidence (R2=0.464, p=0.004) (figure 1) rising between 2013 and 2017 from 7.71/100,000/year to 10.54/100,000/year (R2=0.554, p=0.149); Average incidence over the 5 years was 8.80/100,000 per year. The median age at diagnosis was 13.48 years (IQR 11.08-15.14 years).

In the 2013-17 cohort the incidence of PIBD was higher in males compared to females, 10.84/100,000/year and 6.69/100,000/year respectively (p=0.0001), driven by patients aged between 11-16 years at diagnosis (figure 2) with the incidence being comparable between genders at other ages. ). The overall 5-year incidence (2013-17) of CD was 5.25/100,000/year compared to 3.31/100,000/year for UC (p=0.0002).

From 2002-17 there was a statistically significant positive trend in both CD incidence (R2=0.314, p=0.024) and UC incidence (R2=0.490, p=0.003), but was not seen in IBDU incidence (R2=0.103, p=0.224) probably reflecting the low numbers.

The 2017 Wessex data (10.37/100,000/year) is in line with the highest reported global incidence of PIBD, supporting data detailing increased incidence in the UK over the last 30 years [4]. Increased incidence in the paediatric population will result in an increase in the prevalence of PIBD, placing an increased requirement on current services. Median age of diagnosis in our data was 13.48 years with patients remain in paediatric services for an estimated median time of 4 years (13.5 to 17.5 years) prior to transition to adult care. In our regional catchment population the number of cases per year has increased from 50 (2013) to 68 (2017), a 36% increase. This has resulted in a significant impact on PIBD prevalence- 50 cases staying in service for a 4 years results in 200 PIBD patients in paediatric care compared to 68 cases diagnosed per year resulting in 272 PIBD patients in paediatric care. This has a significant potential impact on paediatric services and contributes further to the increasing global burden of inflammatory bowel disease.

**References**

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**Tables and Figures**

**Figure 1-** Incidence of paediatric inflammatory bowel disease in Wessex over a 16 year period (2002-2017). Data taken from Ashton JJ et al 2014 [1]. All PIBD (R2=0.464, p=0.004), CD (R2=0.314, p=0.024), UC (R2=0.490, p=0.003), IBDU (R2=0.103, p=0.224)

**Figure 2-** Incidence of paediatric inflammatory bowel disease by gender and age of onset from 2013-2017; A- 0-5 years, B- 6-10 years, C- 11-16 years.