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Health service use and associated costs attributable to diabetes in the Mitchelstown Cohort Study

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Introduction: The number of people with diabetes is increasing globally and with evidence of rising medical expenditure per person, the growth in economic burden will continue. Accurate cost of illness estimates are needed to inform national policy and identify potential cost savings. **Aim:** To estimate health service use and costs attributable to diabetes. **Methods:** A sample of middle-aged adults (≥ 50 years) from the Mitchelstown Cohort Study, collected between 2016-2017 was analysed. Diabetes was defined using self-report doctor-diagnosis, HbA1c and fasting plasma glucose levels. Health service use in the previous 12-months included; number of general practitioner (GP) visits, emergency department visits, hospital admissions, outpatient visits, and day procedures. Multivariable negative binomial regression was used to estimate the association between diabetes and frequency of visits. Frequency of visits was applied to unit costs for each health service, calculating mean costs per person with and without diabetes. **Results:** Of 1,332 patients analysed, prevalence of diabetes was 10.4% (95%CI:8.9,12.2) [Diagnosed 7.4% (95%CI:6.1, 8.9), Undiagnosed 3.1% (95%CI:2.3,4.2)]. Diabetes was associated with a 49% increase in GP visits. Diabetes was not associated with additional hospital admissions, emergency department visits, outpatient visits or day procedures. The annual mean cost of health service use among those with diabetes was €1,597.80 per person compared with €1,352.67 for those without. **Conclusion:** While diabetes was associated with additional GP visits, it was not associated with additional service use in secondary care. Structured diabetes management in primary care may contribute to reduced health service use and costs attributable to diabetes.

Histomorphometric changes of lung lymphoid follicles in young rats under experimental alloxan hyperglycemia

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INTRODUCTION: Diabetes has been and remains a global problem today, leading to disability, disability and death. **METHODS:** The studies were performed on 48 white laboratory rats of both sexes. Experimental animals were divided into two series: experimental and intact. Each experimental group is divided into subgroups: the first - with a term of hyperglycemia of 30 days, the second - 60 days, the third - 90 days, the fourth - 120 days. For experimental simulations of hyperglycemia, alloxan monohydrate was used. The perimeter of the lymphoid follicles (PLF) was measured. The level of glucose and glycosylated hemoglobin HbA1c in the venous blood of rats was determined before each slaughter of animals. **RESULTS:** The level of glucose in the blood of experimental animals from 30 to 120 days ranged from 13.3 ± 0.1 to 19.3 ± 0.2 mmol / l, from the end of the second month of the experiment, the level of HbA1C ranged from 7.1 ± 0.05 to 8.6 ± 0.08 . In the intact group, the level of glucose in the blood was within normal limits. On the 30th day, the PLF in intact and experimental animals was 449.3 ± 0.82 μm and 449 ± 0.17 μm , respectively. From 60 days, hypertrophy of pulmonary lymphoid follicles with pronounced vascularization was noted, in comparison with intact animals, the PLF index was 2.3 times higher. Involute changes in lymphoid follicles and malnutrition were observed in intact animals at day 90. In experimental animals of the same age, PLF increased 1.3 times compared with the 60th day. On day 120 of the experiment, PLF in experimental animals increase by 3.8 times compared with intact animals. **DISCUSSION:** Against the background of chronic experimental hyperglycemia, young animals developed hypervascularization and hypertrophy of pulmonary lymphoid follicles, thereby causing obstruction in the lower respiratory tract.