Cohort Study of Pioglitazone and Cancer Incidence in Patients with Diabetes Mellitus

First published: 21/07/2015

Last updated: 02/07/2024

Study Finalised

Administrative details

EU PAS number

EUPAS10335

Study ID

14909

DARWIN EU® study

No

Study countries

United States

Study description

The correlation between thiazolidinedione usage among diabetic patients and cancer risk has been studied previously. However, the most important limitation was the very short-term exposure to pioglitazone. In this cohort study, a large

population of diabetic patients was identified from the Kaiser Permanente of Northern California (KPNC) Diabetes Registry. The patients were originally planned to be followed-up from January 1, 1997 to December 31, 2005 for the usage of pioglitazone and incidence of cancer. Based on the discussion with Advisory board, it was recommended to increase the study population and duration of follow-up. The follow-up period was extended to June 30, 2012 for the study on pioglitazone usage and cancer incidence in diabetes patients (Study 1). The need to conduct an epidemiology study of diabetes and cancer risk (Study 2) was also identified in order to assess the association between diabetes severity and cancer risk. The Study 2 included diabetes patients who were KPNC members between 1997 and 2011. It also included a subset of patients who took the 1996/7 diabetes survey and Member Health Survey (MHS) in 1993, 199, 1999, 2001 or 2003.

Study status

Finalised

Research institutions and networks

Institutions

Takeda

First published: 01/02/2024

Last updated: 01/02/2024

Institution

Keiser Permente Northern California USA,

University of Pennsylvania USA

Contact details

Study institution contact

Assiamira Ferrara trialdisclosures@takeda.com

Study contact

trialdisclosures@takeda.com

Primary lead investigator

Assiamira Ferrara

Primary lead investigator

Study timelines

Date when funding contract was signed

Planned: 01/01/1996

Actual: 01/01/1996

Study start date

Planned: 01/01/1997

Actual: 01/01/1997

Date of interim report, if expected

Planned: 01/09/2011

Actual: 01/09/2011

Date of final study report

Planned: 01/09/2011

Actual: 29/05/2015

Sources of funding

- Pharmaceutical company and other private sector

More details on funding

Takeda

Study protocol

AD4833-403 Protocol KPNC other malignancies_4.pdf (60.33 KB)

Regulatory

Was the study required by a regulatory body?

No

Is the study required by a Risk Management Plan (RMP)?

EU RMP category 3 (required)

Methodological aspects

Study type

Study type list

Study topic:

Disease /health condition

Human medicinal product

Study type:

Non-interventional study

Scope of the study:

Assessment of risk minimisation measure implementation or effectiveness

Disease epidemiology

Data collection methods:

Secondary use of data

Main study objective:

To evaluate whether treatment with pioglitazone was associated with risk of incident cancer at the 10 most common sites (prostate, female breast, lung/bronchus, endometrial, colon, non-Hodgkin lymphoma NHL, pancreas, kidney/renal pelvis, rectal, and melanoma) in a cohort of patients with recognized diabetes.

Study Design

Non-interventional study design

Cohort

Study drug and medical condition

Study drug International non-proprietary name (INN) or common name

PIOGLITAZONE

Medical condition to be studied

Type 2 diabetes mellitus

Population studied

Short description of the study population

Patients from Kaiser Permanente of Northern California (KPNC) Diabetes Registry who were followed up from January 1, 1997 to December 31, 2005 for the usage of pioglitazone and incidence of cancer.

Age groups

- Adults (18 to < 46 years)
- Adults (46 to < 65 years)
- Adults (65 to < 75 years)
- Adults (75 to < 85 years)
- Adults (85 years and over)

Special population of interest

Other

Special population of interest, other

Diabetes mellitus patients

Estimated number of subjects

252467

Study design details

Outcomes

Hazard ratio of the 10 most common cancers associated with ever use of pioglitazone. Hazard ratio of the 10 most common cancers associated with time since first use, duration and dose of pioglitazone. Age, gender, calendar year-specific cancer incidence rates stratified by diabetes status. Age-, gender-adjusted incidence rates stratified by diabetes status, calendar year. Association between diabetes and risk of the 10 most common cancers for full KPNC member and survey responder.

Data analysis plan

Study 1: Cox proportional hazards regression modeling was used to provide point and interval estimates of the relative hazard of the 10 most common cancers associated with ever use of pioglitazone (primary analysis) and time since first use, cumulative duration, and dose (secondary analyses). In all regression analyses, these measures of exposure to pioglitazone were treated as time-dependent covariates and time since entry into the cohort was the time scale. Study 2: Cancer incidence rates were calculated with attention to the proper allocation of at-risk person-time. The association between diabetes and risk of each of the 10 most common cancers was assessed using Cox proportional hazards regression models with control for available potential confounders: age, gender, calendar year. Similarly, Cox regression technique was used to examine the association between diabetes status and cancer risk among survey responders with adjustment for additional potential confounding variable.

Documents

Study results

AD-4833-403 (KPNC 10 common cancers) 10-yr study report.pdf (807.92 KB)

AD-4833-403-FUM 35.4 KPNC Interim Results Report-2011-12-07.pdf (253.7 KB)

Study publications

Lewis JD, Habel LA, Quesenberry CP, et al. Pioglitazone Use and Risk of Bladder...

Data management

ENCePP Seal

The use of the ENCePP Seal has been discontinued since February 2025. The ENCePP Seal fields are retained in the display mode for transparency but are no longer maintained.

Data sources

Data sources (types)

Administrative healthcare records (e.g., claims)

Electronic healthcare records (EHR)

Other

Data sources (types), other

Prospective patient-based data collection

Use of a Common Data Model (CDM)

CDM mapping

No

Data quality specifications

Check conformance

Unknown

Check completeness

Unknown

Check stability

Unknown

Check logical consistency

Unknown

Data characterisation

Data characterisation conducted

No