Economic influences on medical decision-making in cancer medicine: an analysis of qualitative and quantitative data

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Background and objective

- The possible influence of financial factors on medical decision-making is the subject of extensive scientific and social debate [1-2]
- Cancer medicine in particular is a cost-intensive field of medicine [3]
- Oncologists fear a deterioration in healthcare as a result of financial pressure [4]
- However, little is known about the specific situations that are influenced by financial factors and the extent of their impact

The ELABORATE project aims to identify and analyze the influence of financial considerations on decision-making situations in cancer medicine using qualitative and quantitative data

Methods

Qualitative approach

- Semi-structured interviews with physicians experienced in budgeting and controlling in cancer medicine (n=16)
- Qualitative content analysis to identify cancer-related decision-making situations in which interviewees perceived certain medical decisions to be financially influenced

Quantitative approach

- Operationalization of the identified decision-making situations for identification in claims data of a large statutory health insurance (SHI), e.g. by using ICD-10 and ATC codes
- Exploratory analysis of the frequency of identified decision-making situations and their respective decision alternatives
- Verification of cancer diagnoses:

Inpatient sector:	Semi-inpatient sector:	Outpatient sector:
At least one diagnosis within one year	At least two diagnoses in two different quarters of one year or At least one secured diagosis	At least two diagnoses in two different quarters of one year or At least one secured diagosis

M2Q criterion [5]

Results - qualitative approach

- Identification of n=21 decision-making situations in cancer medicine potentially influenced by financial considerations
- Derivation of subcategories based on their financial impact:
  - No reimbursement (n=5)
  - Reimbursement that does not completely cover costs (n=8)
  - Costs covered for treatments with questionable cost-effectiveness (n=1)
  - Reimbursement that exceeds costs (n=7)

Exemplary use case: administration form of systemic antineoplastic therapies in the outpatient sector

- Intravenous (IV) administration: reimbursement per administration
- Subcutaneous (SC) administration: reimbursement per quarter

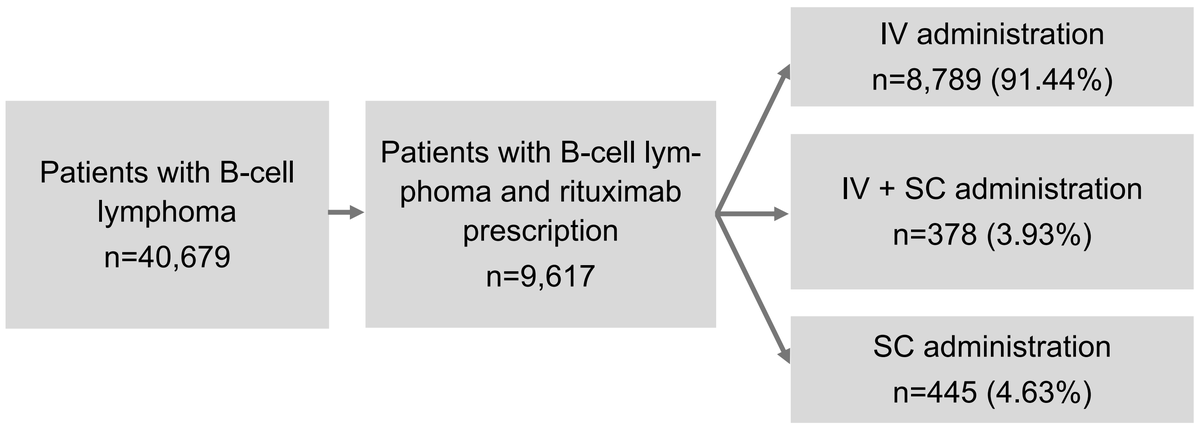
⇒Incentive: priorization of the IV administration

- Medical-clinical perspective: IV and SC administrations offer comparable pharmacological and clinical profiles [6-7], but IV administration requires more time from patients and healthcare professionals [8-9]

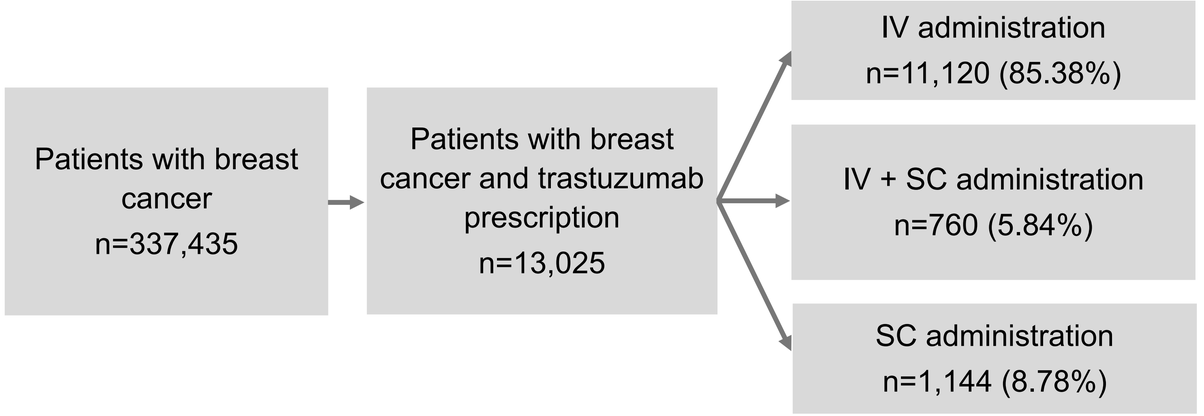
Results - quantitative approach

- Investigation of the identified decision-making situation: analyses of the tumor therapies rituximab for B-cell lymphoma and trastuzumab for breast cancer over the period 2014-2023
- Assumption: in the outpatient sector, IV rituximab and IV trastuzumab are administered more frequently than SC rituximab and SC trastuzumab
- Operationalization:
  - Rituximab - ATC: L01FA01, L01XC02, B-cell lymphoma - ICD-10: C82, C83
  - Trastuzumab - ATC: L01FD01, L01XC03, breast cancer - ICD-10: C50
  - Identification of the administration form by the pharmaceutical registration number

Administration form of rituximab in patients with B-cell lymphoma



Administration form of trastuzumab in patients with breast cancer



⇒The descriptive analyses suggests that, in the outpatient sector, IV rituximab and IV trastuzumab are administered more frequently than their SC counterparts, following the identified financial incentive

Discussion and conclusions

- Some limitations should be considered:
  - Only descriptive analyses of the use case, factors other than the financial incentive may also influence decision-making situations; further analyses steps are planned
  - SHI claims data: limited representativeness for the German population as a whole
- Qualitative and quantitative analyses suggest that financial considerations influence specific medical decision-making situations in German cancer medicine
- These influences could potentially reduce the quality of patient care and consume financial resources that may be needed in other areas of healthcare

⇒Further combined empirical and ethical analyses are needed to inform guidelines on how to address and manage these financial influences

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