Recurrence and progression

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Why record recurrence and progression?

The occurrence (or absence) of recurrence and progression is an important outcome measure for the treatment of cancer, next to survival

As by definition recurrence and progression occur earlier than death, you have the information ‘earlier’

Not all patients with a recurrence or progression die of the disease. Therefore, recurrence and progression offers more ‘complete’ information about the efficacy of the treatment than survival

Definitions

Disease episode is the 'period' of the disease that starts with a specific event, such as 'diagnosis of a new primary tumour', 'recurrence', 'progression' or 'transformation'

Cancer recurrence is the return of cancer after a disease-free period after tumour-reductive treatment where the cancer had a complete clinical or microscopic response to treatment.

Cancer progression is an increase to disease load as assessed after tumour-reductive treatment where a verified complete response was not achieved.

Transformation is a special type of recurrence or progression. It is mostly a progression, but it can also be a recurrence.

Transformation

Transformation is the diagnosis of a more aggressive cancer (morphology) following a more indolent disease. It is not a new primary tumour, but it is (a.o.) the result of additional (epi)genetic alterations in the cancer cells which change the behaviour of the tumour.

Transformation is mostly used in haematological malignancies and classic examples are:

- chronic/indolent myeloid diseases to AML (MDS→AML, CML→AML[ALL], CMML→AML, ET/PV→ AML)

- chronic/indolent lymphoid diseases to DLBCL (CLL→DLBCL, FL→DLBCL, NLPHL→DLBCL, etc.)

Transformation

The occurrence of an aggressive cancer following a more indolent one also occurs in tumours of the central nervous system, but the term 'transformation' is not used:

- low grade astrocytoma → anaplastic astrocytoma

- grade 1 meningioma → grade 3 meningioma

In sarcomas (and sometimes also in carcinomas), transformation is mostly called 'dedifferentiation'

- well differentiated liposarcoma (=grade 1) → dedifferentiated liposarcoma (=grade 3)

In carcinomas, the concept of transformation is seldom used but it may occur, e.g.

- adenocarcinoma of the prostate → small cell neuroendocrine carcinoma of the prostate

Definitions

Tumour-reductive treatment: A form of therapy given to a patient with the intention to reduce the tumour load

For example:

- surgical removal of tumour
- systemic therapy targeting the tumour, such as chemotherapy, monoclonal antibodies, targeted therapy, immunotherapy, hormone therapy
- radiotherapy
- stem cell transplantation
- other or unspecified therapy which reduces the tumour load

Treatment that is not considered tumour-reductive

Treatment for metastases that does not affect the primary tumour

- A patient with metastatic prostate cancer gets 1 dose of radiotherapy on the spine to alleviate the pain

Symptomatic treatments

- Blood transfusion
- Painkiller

No treatment, best supportive care

Wait & see, watchful waiting, active surveillance

Maintenance therapy after initial tumour-reductive treatment (e.g. hormone therapy after surgery or surgery & radiotherapy in breast cancer)

Items to be collected for the primary tumour

1. Tumour-reductive treatment (yes/no/unknown)
   It is not required to register a separate variable as long as you can deduct that there was a tumour-reductive treatment or not
2. Tumour status after the treatment
   - Free of disease / complete response / complete remission (→ recurrence)
   - Partial response / partial decrease in tumour load (→ progression)
   - Progressive disease / increase in tumour load (→ progression)
   - Stable disease (→ progression)
   - Unknown

If you dot not register the tumour status you still can collect recurrence/progression data, but you cannot differentiate between the two of them

Items to be collected for each recurrence/progression

1. Type of recurrence/progression
2. Date of recurrence/progression
3. Basis of diagnosis of recurrence/progression
4. Morphology, including the grade (in case of transformation)
5. Site of the recurrence/progression (for solid cancers)
6. rTNM

Type of recurrence/progression

The type is defined by the presence or absence of tumour after the initial treatment.

Transformation should be recorded separately

Date of recurrence/progression

Follow the rules for the incidence date of the primary tumour

Be aware that pathological confirmation may be after the start of treatment and that you cannot use the date of pathological confirmation in those cases

Basis of diagnosis of recurrence/progression

Follow the rules for the basis of diagnosis of the primary tumour

Note that – like in the primary tumour – the basis of diagnosis and the date of the recurrence/progression have to be defined separately

Increase of tumour specific markers should be combined with clinical opinion, radiology or pathology

Morphology, including the grade

In most cases of (solid) cancers the morphology of the recurrence/progression will be (almost) the same as for the primary tumour and registration may be considered optional

The morphology and grade are especially relevant in case of transformation or dedifferentiation, so record the morphology and grade always in case of recurrence/progression of

- low grade tumours of the central nervous system
- low grade sarcomas
- haematological malignancies

Site of the recurrence/progression

- Local
  - at the site of the primary tumour

Note that the site of the primary tumour may not always be the same organ/topography code after surgery. For example, a recurrence in the scar of the skin after breast surgery (for breast cancer) or a pelvic mass after rectal surgery (for rectal cancer) is a local recurrence.

- Regional
  - in lymph nodes that are regional according to the TNM-classification

Note that the lymphatic flow after surgery may be disturbed and the some sites that are considered distant for the primary tumour may be regional for the recurrence, e.g. contralateral lymph node metastasis after ipsilateral lymph node dissection for breast cancer.

- Distant
  - all other sites

Site of the recurrence/progression

- Site(s) of distant metastasis

Note that 'bone marrow' metastasis of solid cancers should be recorded as 'bone' metastasis. So, code as C41.x and not C42.1.

Examples

1. A patient with metastatic lung cancer was not treated and died three months later
   - No tumour-reductive treatment → no recording of recurrence/progression
2. A patient with metastatic lung cancer was treated with chemotherapy but this was not effective and the patient died three months later
   - tumour-reductive treatment → no response → no recording of recurrence/progression
3. A patient with metastatic lung cancer was treated with chemotherapy but this was not effective. The disease progressed and a second line treatment started with partial response. The patient dies six months later.
   - tumour-reductive treatment → no response → progression → record the progression (if possible: with the second line treatment)

Examples

1. A patient with T1N0 breast cancer was treated with a mastectomy and developed a tumour nodule in the skin of the breast two years later
   - Tumour-reductive treatment → free of tumour → local recurrence after two years
2. A patient with T1N0 breast cancer was treated with a mastectomy and SNB and developed a tumour nodule in the ipsilateral axilla two years later
   - Tumour-reductive treatment → free of tumour → regional recurrence after two years
3. A patient with T2N2 breast cancer was treated with a mastectomy/axillary lymph node dissection and developed bone metastasis six years later
   - Tumour-reductive treatment → free of tumour → distant recurrence after six years

Examples

1. A patient with DLBCL was treated with a R-CHOP, came into CR, but the disease came back two years later
   - Tumour-reductive treatment → complete remission→ recurrence after two years
2. A patient with FL was treated with a R-CVP, came into CR, but the disease came back two years later as a DLBCL
   - Tumour-reductive treatment → complete remission→ transformation after two years
3. A patient with FL was treated with a R-CVP, came into PR, the disease progressed one year later and second-line treatment was started
   - Tumour-reductive treatment → partial remission→ progression after one year



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