Screened data bases

Screened guidelines
8. S3-Leitlinie: Supportive Therapie:
Supportive Care and Management of Side Effects

- **Versionen 2002–2020:**

- **Version 2021:**
  Mundhenke/Nitz
- Guideline - environment
1. S3-Leitlinie: Supportive Therapie: 
Leitlinienprogramm Onkologie (Deutsche Krebsgesellschaft, Deutsche Krebshilfe, AWMF): Supportive Therapie bei onkologischen PatientInnen - Langversion 1.3 – Februar 2020 AWMF-Registernummer: 032/0540L
https://www.leitlinienprogramm-onkologie.de/fileadmin/user_upload/Downloads/Leitlinien/Supportivtherapie/LL_Supportiv_Langversion_1.2.pdf
- **Assessment of toxicity**
  - Acute toxicity (NCI-CTCAE)
  - Long-term toxicity (ICPC, ICD-GM)
## Assessment of toxicity

### Acute Toxicity (according to WHO\(^2\) or NCI-CTC\(^2\))

Acute toxicities should be asked for and documented after every treatment course.

<table>
<thead>
<tr>
<th>Grade</th>
<th>Information required</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>none</td>
</tr>
<tr>
<td>1</td>
<td>mild</td>
</tr>
<tr>
<td>2</td>
<td>moderate</td>
</tr>
<tr>
<td>3</td>
<td>severe</td>
</tr>
<tr>
<td>4</td>
<td>life threatening</td>
</tr>
<tr>
<td>5</td>
<td>death</td>
</tr>
</tbody>
</table>

**LoE 5 D AGO ++**

### Long term toxicity (secondary diseases after tumour therapy)

Long term surveillance and documentation in regular intervals (acc. ICPC\(^6\) following symptoms or acc. ICD-10-GM\(^6\) following diagnoses)

**LoE 5 D AGO ++**

---

### Akute Toxizität

2. NCI, Bethesda, USA, Common Terminology Criteria for Adverse Events v5.0 (CTCAE; published 2017);

### Akute Toxizität nach jedem Therapiezyklus abfragen


### Langzeittoxizität

1. International Classification of Primary Care (ICPC) revised December 2016,
   http://www.who.int/classifications/icd/adaptations/icpc2/en/ (Download 18.01.2018) or
2. Deutschen Institut für Medizinische Dokumentation und Information (DIMDI), ICD-10-GM Version 2017;
3. Kenyon M, Mayer DK, Owens AK. Late and long-term effects of breast cancer treatment and surveillance management for the general


1. NCI, Bethesda, USA, Common Terminology Criteria for Adverse Events v5.0 (CTCAE; published 2017); https://ctep.cancer.gov/protocolDevelopment/electronic_applications/ctc.htm#ctc_50 (Download 18.01.2018)
- Incidence of side effects
  (according to technical product information by MedDRA* classification)

*MedDRA - Medical Dictionary for Regulatory Activities
https://www.meddra.org/
### Chemotherapy – Acute Toxicities I

<table>
<thead>
<tr>
<th>Drugs</th>
<th>System/Organ Class</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cyclophosphamide</td>
<td>4</td>
</tr>
<tr>
<td>Methotrexate</td>
<td>3</td>
</tr>
<tr>
<td>5-Fluorouracil</td>
<td>3</td>
</tr>
<tr>
<td>Capecitabin</td>
<td>4</td>
</tr>
<tr>
<td>Gemcitabin</td>
<td>3</td>
</tr>
<tr>
<td>Mitomycin</td>
<td>4</td>
</tr>
<tr>
<td>Etoposide/Doxorubicin</td>
<td>2</td>
</tr>
<tr>
<td>L-Ascorbic Acid / Oxaliplatin</td>
<td>3</td>
</tr>
<tr>
<td>PEG-Ascorbic Acid / Oxaliplatin</td>
<td>4</td>
</tr>
<tr>
<td>Mitomycin / Oxaliplatin</td>
<td>4</td>
</tr>
<tr>
<td>Paclitaxel</td>
<td>4</td>
</tr>
<tr>
<td>Docetaxel</td>
<td>4</td>
</tr>
<tr>
<td>Trabectedin / Epothilone</td>
<td>5</td>
</tr>
</tbody>
</table>

**Nebenwirkungskategorien - MedDRA (Medical Dictionary for Regulatory Activities)**

MedDRA: [https://www.meddra.org/](https://www.meddra.org/) bzw. [https://www.meddra.org/sites/default/files/guidance/file/intguide_20_1_english_0.pdf](https://www.meddra.org/sites/default/files/guidance/file/intguide_20_1_english_0.pdf)

**Quellen für die Fachinformationen (Download 19.01.2018)**

- Methotrexat: [https://www.gelbe-liste.de/produkte/MTX-HEXAL-10-mg-Tabletten_117469/fachinformation](https://www.gelbe-liste.de/produkte/MTX-HEXAL-10-mg-Tabletten_117469/fachinformation)
- 5-Fluorouracil: [https://www.gelbe-liste.de/produkte/Fluorouracil-HEXAL-50-mg-ml-Injektionsloesung-100-ml_546519/fachinformation](https://www.gelbe-liste.de/produkte/Fluorouracil-HEXAL-50-mg-ml-Injektionsloesung-100-ml_546519/fachinformation)
- Capecitabin: [https://www.zentiva.de/Produkte/Capecitabin-Zentiva/Downloads?id=a63946ee-51ce-46ac-8184-a468b705ed9b](https://www.zentiva.de/Produkte/Capecitabin-Zentiva/Downloads?id=a63946ee-51ce-46ac-8184-a468b705ed9b)
- Cisplatin: [https://www.gelbe-liste.de/produkte/Cisplatin-Teva-1-mg-ml-Konzentrat-zur-Herstellung-einer-Infusionsloesung-100-ml_543960/fachinformation](https://www.gelbe-liste.de/produkte/Cisplatin-Teva-1-mg-ml-Konzentrat-zur-Herstellung-einer-Infusionsloesung-100-ml_543960/fachinformation)
- Carboplatin: [http://www.teva.de/index.php?id=dumpFile&f=&f=37532&g=-1&r=11068%2C11068&token=eebfb22e78f1cc8d9935d59c087e80630146f49e](http://www.teva.de/index.php?id=dumpFile&f=&f=37532&g=-1&r=11068%2C11068&token=eebfb22e78f1cc8d9935d59c087e80630146f49e)

**Supportive Care and Management of Side Effects**
Weitere Referenzen (Auswahl)
10. Crawford J.
Cisplatin: https://www.gelbe-liste.de/produkte/Cisplatin-Teva-1-mg-ml-Konzentrat-zur-Herstellung-einer-Infusionslosung-100-ml_543960/fachinformation
Carboplatin: http://www.teva.de/index.php?eID=dumpFile&t=f&f=37532&g=-1&r=11068%2C11068&token=eebfb22e78f1cc8d9935d59c087e80630146f49e
Epirubicin:
Doxorubicin:
Mitoxantron: https://www.gelbe-liste.de/produkte/Mitoxantron-Teva-2-mg-ml-Injektionsloesung-15ml_543783/fachinformation
Paclitaxel: https://medikamio.com/de-de/medikamente/paclitaxel-ratiopharm/pil
Nab-Paclitaxel: https://www.gelbe-liste.de/produkte/Abraxane-5-mg-ml-Pulver-zur-Herstellung-einer-Infusionssuspension_514889/fachinformation
Docetaxel: https://mein.sanofi.de/produkte/Taxotere/Downloads?id=89447754-dfb2-450b-b35a-36950de8a74d

Weitere Referenzen (Auswahl)
Onkologie 36(5): 266-272.


10. Crawford J.


## Nebenwirkungskategorien - MedDRA (Medical Dictionary for Regulatory Activities)

**MedDRA:** [https://www.meddra.org/](https://www.meddra.org/) bzw. [https://www.meddra.org/sites/default/files/guidance/file/intguide_20_1_english_0.pdf](https://www.meddra.org/sites/default/files/guidance/file/intguide_20_1_english_0.pdf)

### Quellen für die Fachinformationen (Download 19.01.2018)

- **Tamoxifen:** [https://www.gelbe-liste.de/produkte/Tamoxifen-20-mg-HEXAL-Filmtbl_8660/fachinformation](https://www.gelbe-liste.de/produkte/Tamoxifen-20-mg-HEXAL-Filmtbl_8660/fachinformation)
- **Anastrozol:** [https://imedikament.de/anastrozol-ratiopharm-1-mg-filmtabletten/fachinformation](https://imedikament.de/anastrozol-ratiopharm-1-mg-filmtabletten/fachinformation)
- **Fulvestrant:** [https://www.gelbe-liste.de/produkte/Fulvestrant-HEXAL-250-mg-Injektionsloesung-in-einer-Fertigspritze_912622/fachinformation](https://www.gelbe-liste.de/produkte/Fulvestrant-HEXAL-250-mg-Injektionsloesung-in-einer-Fertigspritze_912622/fachinformation)

![Endocrine Therapy – Toxicities Table](image)
Cardiotoxicity...


Troponin I...

Bevacizumab ....

Lapatinib...

Pertuzumab

**T-DM1**

**Trastuzumab-Deruxtecan**
3. Neratinib: FDA Produktinformation 2017
Common Toxicities with antiHER2-TKI: Tucatinib, Trastuzumab + Capecitabine

<table>
<thead>
<tr>
<th>Event</th>
<th>Capecitabine</th>
<th>Tucatinib</th>
<th>Trastuzumab</th>
<th>≥3 grade (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Any adverse event</td>
<td>99.3</td>
<td>55.2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Diarrhea</td>
<td>80.9</td>
<td></td>
<td>12.9</td>
<td></td>
</tr>
<tr>
<td>PPE syndrome</td>
<td>63.4</td>
<td></td>
<td>13.1</td>
<td></td>
</tr>
<tr>
<td>Nausea</td>
<td>58.4</td>
<td></td>
<td>3.7</td>
<td></td>
</tr>
<tr>
<td>Fatigue</td>
<td>45.0</td>
<td></td>
<td>4.7</td>
<td></td>
</tr>
<tr>
<td>Vomiting</td>
<td>35.9</td>
<td></td>
<td>3.0</td>
<td></td>
</tr>
<tr>
<td>Stomatitis</td>
<td>25.5</td>
<td></td>
<td>2.5</td>
<td></td>
</tr>
<tr>
<td>Reduced appetite</td>
<td>24.8</td>
<td></td>
<td>0.5</td>
<td></td>
</tr>
<tr>
<td>Headache</td>
<td>21.5</td>
<td></td>
<td>0.5</td>
<td></td>
</tr>
</tbody>
</table>

**Toxicities of New Substances – CDK 4/6 Inhibitors (Palbociclib/Ribociclib/Abemaciclib)**

<table>
<thead>
<tr>
<th>UC, %</th>
<th>All Grades</th>
<th>Grade 3</th>
<th>Grade 4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Metropoiesis</td>
<td>29.5/74.3/41.3</td>
<td>56.1/49.7/15.6</td>
<td>10.4/9.6/1.5</td>
</tr>
<tr>
<td>Leucopenia</td>
<td>39.6/32.9/20.8</td>
<td>24.1/19.8/7.5</td>
<td>0.7/1.2/0.3</td>
</tr>
<tr>
<td>Anemia</td>
<td>24.1/19.8/18.4</td>
<td>3.1/0.9/0.9</td>
<td>0.2/0.9/0.9</td>
</tr>
<tr>
<td>Thrombocytopenia</td>
<td>15.5/5.7/10.0</td>
<td>1.4/0.6/2.0</td>
<td>0.2%/&lt;1.0</td>
</tr>
<tr>
<td>Fatigue</td>
<td>37.4/36.5/40.1</td>
<td>1.8/1.1/1.8</td>
<td>0.0/0.7/0.0</td>
</tr>
<tr>
<td>Nausea</td>
<td>35.2/31.5/35.6</td>
<td>0.2/0.4/0.9</td>
<td>0/0/0</td>
</tr>
<tr>
<td>Vomiting</td>
<td>15.5/20.3/20.4</td>
<td>0.5/3.6/1.2</td>
<td>0/0/0</td>
</tr>
<tr>
<td>Diarrhea</td>
<td>26.1/35.0/41.3</td>
<td>1.4/3.5/9.5</td>
<td>0/0/0</td>
</tr>
<tr>
<td>Alopecia</td>
<td>32.9/33.2/20.6</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>Transaminase</td>
<td>17.8/33.2/14.0</td>
<td>0.9/0.6/1.0</td>
<td>0/0/0</td>
</tr>
<tr>
<td>ALT elevated</td>
<td>9.9/15.6/15.6</td>
<td>1.7/5.9/5.8</td>
<td>0.1/0.8/0.3</td>
</tr>
<tr>
<td>AST elevated</td>
<td>9.7/15.0/15.0</td>
<td>2.5/4.5/5.0</td>
<td>0/0/0</td>
</tr>
<tr>
<td>Infections</td>
<td>60/50/30/1</td>
<td>0.0/0.0/0.0</td>
<td>1/0/0</td>
</tr>
</tbody>
</table>

**Palbociclib**

**Ribociclib**

**Abemaciclib**


<table>
<thead>
<tr>
<th>Toxicity</th>
<th>All grades (%)</th>
<th>grade &gt;3 (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stomatitis</td>
<td>11.6</td>
<td>1.6</td>
</tr>
<tr>
<td>Exanthema</td>
<td>7.4</td>
<td>0.02</td>
</tr>
<tr>
<td>Anemia</td>
<td>3.3</td>
<td>1.3</td>
</tr>
<tr>
<td>Fatigue</td>
<td>6.8</td>
<td>0.8</td>
</tr>
<tr>
<td>Nausea</td>
<td>5.6</td>
<td>0</td>
</tr>
<tr>
<td>Diarrhea / Vomitting</td>
<td>2.9</td>
<td>0</td>
</tr>
<tr>
<td>Diarrhea</td>
<td>6.7</td>
<td>0.02</td>
</tr>
<tr>
<td>Loss of appetite</td>
<td>6.9</td>
<td>0.02</td>
</tr>
<tr>
<td>Headache</td>
<td>3.9</td>
<td>0</td>
</tr>
<tr>
<td>Weight loss</td>
<td>3.9</td>
<td>0</td>
</tr>
<tr>
<td>Dyspnea</td>
<td>3.9</td>
<td>0.06</td>
</tr>
<tr>
<td>Arthralgia</td>
<td>3.3</td>
<td>0</td>
</tr>
<tr>
<td>Epistaxis</td>
<td>3.1</td>
<td>0</td>
</tr>
<tr>
<td>Edema</td>
<td>2.9</td>
<td>0</td>
</tr>
<tr>
<td>Constipation</td>
<td>2.6</td>
<td></td>
</tr>
<tr>
<td>Pyrexia</td>
<td>2.9</td>
<td>0</td>
</tr>
<tr>
<td>Cough</td>
<td>4.5</td>
<td>0</td>
</tr>
<tr>
<td>ALT Elevated</td>
<td>2.6</td>
<td>0</td>
</tr>
<tr>
<td>Pneumonitis</td>
<td>0.2</td>
<td>0</td>
</tr>
<tr>
<td>Anemia</td>
<td>2.4</td>
<td>0.04</td>
</tr>
<tr>
<td>Dyspnea</td>
<td>4.3</td>
<td>0</td>
</tr>
</tbody>
</table>
1. H. S. Rugo, F. André, et al. Time Course and Management of Key Adverse Events During the Randomized Phase 3 SOLAR-1 Study of PI3K inhibitor Alpelisib Plus Fulvestrant in Patients With HR-Positive Advanced Breast Cancer in press, 2020

**Toxicities of new compounds: PIK3CA - alpelisib**

<table>
<thead>
<tr>
<th>Side Effect</th>
<th>All Grade</th>
<th>Grade ≥3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hypoglycemia</td>
<td>63.7%</td>
<td>32.7%</td>
</tr>
<tr>
<td>Diarrhea</td>
<td>57.7%</td>
<td>6.7%</td>
</tr>
<tr>
<td>Neutropenia</td>
<td>44.7%</td>
<td>2.5%</td>
</tr>
<tr>
<td>Decreased appetite</td>
<td>35.6%</td>
<td>&lt; 1% SAE</td>
</tr>
<tr>
<td>Rash</td>
<td>35.5%</td>
<td>9.9%</td>
</tr>
<tr>
<td>Vomiting</td>
<td>27.1%</td>
<td>&lt; 1% SAE</td>
</tr>
<tr>
<td>Weight loss</td>
<td>20.8%</td>
<td>3.9%</td>
</tr>
<tr>
<td>Stomatitis</td>
<td>24.6%</td>
<td>2.5%</td>
</tr>
<tr>
<td>Fatigue</td>
<td>24.3%</td>
<td>3.5%</td>
</tr>
<tr>
<td>Anemia</td>
<td>20.4%</td>
<td>1.8%</td>
</tr>
<tr>
<td>Alopecia</td>
<td>19.7%</td>
<td>0</td>
</tr>
<tr>
<td>Mucositis</td>
<td>18.3%</td>
<td>2.1%</td>
</tr>
</tbody>
</table>

Consider recommendations for management of side effects (diabetes mellitus, hyperglycemia, insulin resistance, and metabolic syndrome)


Immune Checkpoint Inhibitors

- Therapeutic approaches (antibodies)
  - PD1/PD-L1
    - PD1
      - nivolumab
    - pembrolizumab
    - PD-L1
      - atezolizumab
      - durvalumab
      - avelumab


## Immune Checkpoint Inhibitors
### Toxicities (Total in %)

<table>
<thead>
<tr>
<th></th>
<th>Atezolizumab</th>
<th>Nivolumab</th>
<th>Pembrolizumab</th>
</tr>
</thead>
<tbody>
<tr>
<td>Diarrhea</td>
<td>18.6%</td>
<td>13%</td>
<td>18%</td>
</tr>
<tr>
<td>Colitis</td>
<td>1.1%</td>
<td>2%</td>
<td>1%</td>
</tr>
<tr>
<td>Exanthema</td>
<td>18.6%</td>
<td>15%</td>
<td>&lt;1%</td>
</tr>
<tr>
<td>Hepatotoxicity</td>
<td>0.3%</td>
<td>1%</td>
<td>0.5%</td>
</tr>
<tr>
<td>Hypophysitis</td>
<td>&lt;0.1%</td>
<td>&lt;1%</td>
<td>0.5%</td>
</tr>
<tr>
<td>Pneumonitis</td>
<td>3.1%</td>
<td>3%</td>
<td>2.9%</td>
</tr>
<tr>
<td>Thyroid Dysfunction</td>
<td>Hyper-1.7%</td>
<td>Hyper -1%</td>
<td>Hyper-1.2%</td>
</tr>
<tr>
<td></td>
<td>Hypo-4.7%</td>
<td>Hypo-4%</td>
<td>Hypo-8.3%</td>
</tr>
<tr>
<td>Nephritis</td>
<td>&lt;1%</td>
<td>1%</td>
<td>0.7%</td>
</tr>
<tr>
<td>Neuropathy</td>
<td>0.2%</td>
<td>&lt;1%</td>
<td>&lt;1%</td>
</tr>
</tbody>
</table>

Atezolizumab technical product information 2018; Nivolumab, safety management BMS 2014; Pembrolizumab PI 2014

Atezolizumab: https://www.fachinfo.de/suche/fi/021700
Nivolumab: https://www.fachinfo.de/suche/fi/020675
Pembrolizumab: https://www.fachinfo.de/suche/fi/020716
### Immune Checkpoint Inhibitors

#### Principles of Adverse Event Management

<table>
<thead>
<tr>
<th>CTC AE-Grade</th>
<th>Management</th>
</tr>
</thead>
</table>
| 1            | - supportive therapy  
               - close examination  
               - exclusion of infective complications  
               - patient information |
| 2            | Like grade 1 but  
               - intermission of therapy until recovery of all IrAE to grades 0-1  
               - consider corticosteroids |
| 3            | - supportive therapy  
               - IV steroids (e.g. 1-2 mg/kg prednisolone)  
               - in case of no improvement within 48 h:  
                 - consider additional immunosuppressive therapy (infliximab, MMF)  
                 - consider further organ specific diagnostics (e.g. colonoscopy)  
                 - consider specialists consultations  
                 - exclusion or treatment of infection  
                 - stop of treatment, re-initiation after recovery to CTC AE grades 0, 1  
                 - slow reduction of steroids (1-6 weeks) |
| 4            | Like grade 3 but persistent withdrawal of therapy |

Side effects according Organ Systems  
Incidence, Prevention, Therapy

1. Infections
   - General prophylaxis for infections
   - Hepatitis B virus screening
   - Covid-19 (see joint guidelines with DGHO)
Prophylaxis of Infections
rarely applicable to patients with solid tumors (e.g. BC)
ASCO Practice Guideline „Antimicrobial Prophylaxis...“ 2018

- Avoidance of behavior or situations that are associated with high risk for infections
  - Prophylactic treatment in low-risk patients
  - Prophylactic treatment in high-risk* patients (e.g. according to NCCN Guidelines) with
    - Antibiotics
    - Anti-fungal agents (triazole)
    - Virostatics in solid tumors
    - Granulocyte colony-stimulating factors

  * High-risk: estimated duration of neutropenia < 100/μl > 7d

<table>
<thead>
<tr>
<th>Oxford</th>
<th>LoE</th>
<th>GR</th>
<th>AGO</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>5</td>
<td>D</td>
<td>+</td>
</tr>
<tr>
<td></td>
<td>1a</td>
<td>B</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>1a</td>
<td>A</td>
<td>++</td>
</tr>
<tr>
<td></td>
<td>1a</td>
<td>B</td>
<td>+/-</td>
</tr>
<tr>
<td></td>
<td>5</td>
<td>D</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>1a</td>
<td>A</td>
<td>++</td>
</tr>
</tbody>
</table>

ASCO:

NCCN:


2. Neoplasms benign, malignant and unspecified (incl. cysts and polyps)
Secondary Malignancies I

- With regard to solid tumors, chemotherapy induced secondary malignancies are rare events  
  2a
- Alkylating agents increase the risk of leukemia dose-dependently to a total of 0.2–0.4% within 10–15 years  
  2a
- Anthracycline-containing regimens increase the risk of MDS and leukemia to 0.2–1.7% within 8 to 10 years  
  2a
- PARP-inhibitors are associated with an increased risk of AML and MDS to 0.5–1%  
  2b
- Radiotherapy increases the risk of leukemia by 0.2–0.4% in patients treated with anthracycline-containing chemotherapy  
  2b
- Tamoxifen approximately doubles the risk for developing endometrial cancer (in pts. older than 55y at start of therapy)  
  2b

Supportive Care and Management of Side Effects

**Statements 1-4**


Tamoxifen and endometrial cancer


Secondary Malignancies II (After Radiotherapy)

- Radiotherapy (PMRT, BET) may moderately enhance the risk of ipsilateral lung cancer and angiosarcoma (10-15 / 10,000) 5–10 years after treatment
  - Enhanced risk especially among ever smokers
  - No difference of secondary malignancy between PBI und WBI


3. Blood and Lymphatic System Disorders
   - Anemia
   - Neutropenia
   - Febrile Neutropenia (FN)
Anemia – Indications for Therapy with Erythropoiesis-stimulating agents (ESAs)

- Indicated in asymptomatic anemia
- Therapy and secondary prophylaxis in CTx-induced anemia
  - Adjuvant setting
  - Neo/adjuvant/metastatic setting
  - In dose-dense / dose-escalated CTx (idd/ETC)
- Treatment start at Hb-levels < 10 g/dL
- Target Hb 11–12 g/dL
- Improvement of outcome (DFS, OS)
- Risk of thromboembolic events is increased by use of ESAs

Leitlinie:
Leitlinienprogramm Onkologie (Deutsche Krebsgesellschaft, Deutsche Krebshilfe, AWMF): Supportive Therapie bei onkologischen PatientInnen - Langversion 1.3, 2020,
AWMF Registernummer: 032/0540L

5. Aapro M, Moebus V, Nitz U et al.: Safety and efficacy outcomes with erythropoiesis-stimulating agents in patients with breast cancer:


Relevante Leitlinien


Relevante Leitlinien

5. Leitlinienprogramm Onkologie (Deutsche Krebsgesellschaft, Deutsche Krebshilfe, AWMF): Supportive Therapie bei onkologischen PatientInnen - Langversion 1.3, 2020, AWMF Registernummer: 032/054OL,
Relevante Leitlinien

1. S3-Leitlinie: Supportive Therapie: Leitlinienprogramm Onkologie (Deutsche Krebsgesellschaft, Deutsche Krebshilfe, AWMF): Supportive Therapie bei onkologischen PatientInnen - Langversion 1.3 – Februar 2020
2. NCCN Guidelines 2020

Statements 1-4
Management of Febrile Neutropenia


EORTC and ASCO G-CSF Guideline-Based FN Risk Assessment


EORTC and ASCO G-CSF Guideline-Based FN Risk Assessment


5. Psychiatric Disorders
  - Depression
  - Fatigue
  - Cognitive impairment
  - Sleep disturbances
## (Therapy-associated) Depression

| Statement | Evidence Level (LoE) | Grade (GR) | AGO n.31.6
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Depression is an often reported adverse event in breast cancer patients (20-30%)</td>
<td>2a</td>
<td>B</td>
<td></td>
</tr>
<tr>
<td>2. Psychological interventions are effective to improve mood, but not survival in distressed and depressed patients</td>
<td>1b</td>
<td>A</td>
<td></td>
</tr>
<tr>
<td>3. Antidepressants have been shown to improve depression in breast cancer patients</td>
<td>1b</td>
<td>A</td>
<td></td>
</tr>
</tbody>
</table>
| 4. Regular exercise participation can prevent depression in breast cancer survivors | 2b | B | +

### Statements 1-4


Fatigue is frequently present...

Psychosocial interventions...

Physical exercise....

Methylphenidate...
(Therapy-associated) Cognitive Impairment

- Therapy-related cognitive deficits ("chemobrain") frequently described (16–75%)
- Cognitive-behavioral therapy beneficial for cognitive function
- Methylphenidate may improve cognitive function in cancer patients
- On aromatase inhibitor therapy, deterioration of cognitive performance was observed (espec. verbal memory)

<table>
<thead>
<tr>
<th>Oxford LoE</th>
<th>GR</th>
</tr>
</thead>
<tbody>
<tr>
<td>2a</td>
<td>B</td>
</tr>
<tr>
<td>2b</td>
<td>B</td>
</tr>
<tr>
<td>3a</td>
<td>C</td>
</tr>
<tr>
<td>1a</td>
<td>B</td>
</tr>
</tbody>
</table>

Therapiebedingte kognitive Störungen (sog. „Chemobrain“) häufig beschrieben


Verhaltenstherapie kann kognitive Funktion verbessern
Methylphenidate kann kognitive Funktion bei Patientinnen mit Krebs verbessern

Unter Aromatasehemmertherapie wurden kognitive Störungen beobachtet


Sleep disturbances are a common problem in breast cancer patients during and after therapy (20–70%).

- Behavioral therapies have demonstrated efficacy in treatment of insomnia and improved quality of life.


Behavioral therapies have demonstrated efficacy.....


6. Nervous system disorders
   - Chemotherapy-Induced Peripheral Neuropathy (CIPN)
Chemotherapy-Induced Peripheral Neuropathy (CIPN)

- **Incidence with taxanes:**
  - Grade 1–2: 20–50 %
  - Grade 3–4: 6–20 %

- **Risk factors:** type and dose of chemotherapy, BMI, reduced physical activity

- **Individual risk factors**
  - Diabetes mellitus
  - Nutritive-toxic compounds, particularly alcohol
  - Renal failure
  - Hypothyreosis
  - Collagenoses / vasculitis
  - Vitamin deficiency
  - HIV-infection
  - CMT-Gen mutations

- **Unclear:**
  - Other genetic factors (SNPs, mutations)


Chemotherapy-induced Peripheral Neuropathy

– Prevention –

Non drug-based prevention

- Functional training (physical fitness, sensomotoric stimulation training etc.)
- Compression treatment (light surgical gloves, compression stockings)
- Cooling gloves and stockings
- Electro-epidural

Drug-based prevention

There is no drug-based prophylaxis available

- Venlafaxin
- Palmitoylethanolamine (PEA) topically or PO
- Δ-lipoic acid (thioctic acid), amitriptyline, acetaminophen, carbamazepine, electrolyte solutions, gluthexthone, Gexajekikum (GUS), oxcarbazepine, vitamin B, vitamin E, or other compounds

<table>
<thead>
<tr>
<th>Non drug-based prevention</th>
<th>LoE</th>
<th>GR</th>
<th>AGO</th>
</tr>
</thead>
<tbody>
<tr>
<td>Functional training</td>
<td>5</td>
<td>D</td>
<td>+</td>
</tr>
<tr>
<td>Compression treatment</td>
<td>2b</td>
<td>B</td>
<td>+</td>
</tr>
<tr>
<td>Cooling gloves and stools</td>
<td>2b+</td>
<td>B</td>
<td>+/-</td>
</tr>
<tr>
<td>Electro-epidural</td>
<td>1b</td>
<td>B</td>
<td>-</td>
</tr>
</tbody>
</table>

Reviews/Leitlinien


Nicht-medikamentöse Prävention

Funktionstraining
http://meetinglibrary.asco.org/content/170470-176.


Kompression


Kühlung
http://meetinglibrary.asco.org/content/166655-176.


Elektro-Akupunktur

**Medikamentöse Prävention**

**Venlafaxin**

**Palmitoylethanolamid (PEA)**

**Verschiedene Substanzen**


Acetyl-L-Carnitine


### Chemotherapy-induced Peripheral Neuropathy

---

**- Therapy -**

<table>
<thead>
<tr>
<th>Non drug-based therapy</th>
<th>Oxford</th>
<th>LoE</th>
<th>GR</th>
<th>AGO</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Functional training (physical fitness, sensomotoric stimulation training etc.)</td>
<td>2a</td>
<td>C</td>
<td>+</td>
<td></td>
</tr>
<tr>
<td>• Physiotherapy / physical treatment</td>
<td>5</td>
<td>D</td>
<td>+</td>
<td></td>
</tr>
<tr>
<td>• acupuncture</td>
<td>2b</td>
<td>B</td>
<td>+</td>
<td></td>
</tr>
</tbody>
</table>

**Drug-based therapy**

<table>
<thead>
<tr>
<th></th>
<th>Oxford</th>
<th>LoE</th>
<th>GR</th>
<th>AGO</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Menthol locally (1%), capsaicin/lidocain locally</td>
<td>5</td>
<td>D</td>
<td>+</td>
<td></td>
</tr>
<tr>
<td>• Baclofen/amitryptiline/ketamin-gel</td>
<td>2b</td>
<td>B</td>
<td>+</td>
<td></td>
</tr>
<tr>
<td>• Duloxetine for therapy of CIPN-induced pain</td>
<td>1b</td>
<td>B</td>
<td>+</td>
<td></td>
</tr>
<tr>
<td>• Opioids for therapy of CIPN-induced pain</td>
<td>5</td>
<td>D</td>
<td>+</td>
<td></td>
</tr>
<tr>
<td>• Palmitoylthanolamine (PEA) topically or PO.</td>
<td>5</td>
<td>D</td>
<td>+/-</td>
<td></td>
</tr>
<tr>
<td>• Venlafaxine</td>
<td>5</td>
<td>D</td>
<td>+/-</td>
<td></td>
</tr>
<tr>
<td>• Gabapentin, pregabaline</td>
<td>1b</td>
<td>B</td>
<td>+/-</td>
<td></td>
</tr>
<tr>
<td>• Amitriptyline/nortriptyline, iripramine/desipramine</td>
<td>1b</td>
<td>B</td>
<td>+/-</td>
<td></td>
</tr>
<tr>
<td>• Acetyl-L-carnitine, lamotrigine, or other compounds</td>
<td>1b</td>
<td>B</td>
<td>-</td>
<td></td>
</tr>
</tbody>
</table>

1 For list of not recommended drugs, see Hershman et al. 2014

---

**Reviews / Leitlinien**


**Nicht-medikamentöse Therapie**

Funktionstraining

**Medikamentöse Therapie**

Menthol / Capsaicin
1. Fallon MT, Storey DJ, Krishan A, et al.: Cancer treatment-related neuropathic pain: proof of concept study with menthol--a TRPM8 agonist. Support Care Cancer. 2015 Sep;23(9):2769-77

Baclofen/Amitryptilin/Ketamin-Creme


**Duloxetine**

**Akupunktur:**

**Palmitoylethanolamid (PEA)**

**Venlafaxin**

**Gabapentin, Pregabalin:**

**Amitrptylin/Nortriptylin**

**Acetyl-L-Carnitin, Lamotrigin oder andere Substanzen:**


14. The prescription of medical cannabis by a transitional pain service to wean a patient with complex pain from opioid use following liver transplantation: a case report.


7. Cardiac Disorders
Statements

“Equivalent cardiotoxicity of doxorubicin and epirubicin at recommended dose levels (450–500 and 900–1000 mg/m² cum. dose, resp.)”
“Liposome encapsulated anthracyclines (doxorubicin) induce less cardiotoxicity”

“Anthracycline- or trastuzumab-associated cardiotoxicity may occur earlier/more frequently...”

“Trastuzumab-related cardiotoxicity in the elderly: a role for cardiovascular risk factors.”


“Monitoring of cardiac function before / during / after treatment: Echocardiography (LVEF or SF in %)”


**Troponin as Early Predictor for Cardiotoxicity**


**Betablocker-Prophylaxe**


Statement: Cardiac Monitoring (5 D ++)
Vote result of the AGO recommendation: 100%
# Feasibility of Treatment Combinations Considering Toxicities

<table>
<thead>
<tr>
<th>Oxford</th>
<th>LoE</th>
<th>GR</th>
<th>AGO</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Regarding cardiac toxicity</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>▪ Trastuzumab concurrent with radiotherapy</td>
<td>2b</td>
<td>B</td>
<td>+</td>
</tr>
<tr>
<td>▪ Trastuzumab concurrent with epirubicin</td>
<td>2b</td>
<td>B</td>
<td>+/-</td>
</tr>
<tr>
<td>▪ Trastuzumab concurrent with doxorubicin</td>
<td>2b</td>
<td>B</td>
<td>-</td>
</tr>
<tr>
<td>▪ Anthracycline concurrent with radiotherapy</td>
<td>2c</td>
<td>C</td>
<td>-</td>
</tr>
<tr>
<td><strong>Regarding lung and breast fibrosis</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>▪ Tamoxifen concurrent with radiotherapy</td>
<td>3</td>
<td>C</td>
<td>+/-</td>
</tr>
<tr>
<td>▪ Chemotherapy concurrent with radiotherapy</td>
<td>1b</td>
<td>B</td>
<td>-</td>
</tr>
</tbody>
</table>

"Trastuzumab simultaneous to radiotherapy"

"Trastuzumab simultaneous to epirubicin"
“Trastuzumab simultaneous to doxorubicin”

“Anthracycline simultaneous to radiotherapy”

“Tamoxifen simultaneous to radiotherapy”

8. Gastrointestinal Disorders

- Nausea, Emesis
- Mucositis
  - Stomatitis (Everolimus)
- Diarrhea
- Constipation
### Antiemetic Therapy

**http://www.mascc.org/antiemetic-guidelines**  
**www.onkosupport.de**

<table>
<thead>
<tr>
<th>Condition</th>
<th>Oxford LoE</th>
<th>GR</th>
<th>AGO</th>
</tr>
</thead>
<tbody>
<tr>
<td>Prior assessment of emetic potential of chemotherapy protocol</td>
<td>5</td>
<td>D</td>
<td>++</td>
</tr>
<tr>
<td>Neurokinin-1-receptor-antagonists</td>
<td>1b</td>
<td>A</td>
<td>++</td>
</tr>
<tr>
<td>Dexamethasone (also in chemotherapy combinations with ICPI)</td>
<td>1a</td>
<td>A</td>
<td>++</td>
</tr>
<tr>
<td>5-HT\textsubscript{3}-antagonists</td>
<td>1b</td>
<td>A</td>
<td>++</td>
</tr>
<tr>
<td>Fixed antiemetic combination therapy</td>
<td>1b</td>
<td>A</td>
<td>++</td>
</tr>
<tr>
<td>Rescue Medication</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Olanzapine</td>
<td>1b</td>
<td>A</td>
<td>+</td>
</tr>
<tr>
<td>Levomepromazine, benzodiazepines</td>
<td>3b</td>
<td>C</td>
<td>+</td>
</tr>
<tr>
<td>Cannabinoids, ginger</td>
<td>3b</td>
<td>C</td>
<td>+</td>
</tr>
</tbody>
</table>

ICPI=Immune Checkpoint Inhibitor

8. Jordan K, Schaffrath F, Jahn F et al. Neuropharmacology and management of chemotherapy-induced nausea and vomiting in patients...
1. Keith B. : Systematic review of the clinical effect of glucocorticoids on nonhematologic malignancy BMC Cancer (2008);8:84
10. Olver I, Paska W, Depierre A, et al.: A multicentre, double-blind study comparing placebo, ondansetron and ondansetron plus...

11. Antiemetics: ASCO Guideline Update

Olanzepine
# Antiemetic Therapy

## ACUTE Nausea and Vomiting: SUMMARY

<table>
<thead>
<tr>
<th>EMETIC RISK GROUP</th>
<th>ANTIEMETICS</th>
</tr>
</thead>
<tbody>
<tr>
<td>High Non-AC</td>
<td>5-HT&lt;sub&gt;3&lt;/sub&gt; + DEX + NK&lt;sub&gt;1&lt;/sub&gt;, +/- OLI &lt;sup&gt;+&lt;/sup&gt;</td>
</tr>
<tr>
<td>High AC</td>
<td>5-HT&lt;sub&gt;3&lt;/sub&gt; + DEX + NK&lt;sub&gt;1&lt;/sub&gt;, +/- OLI &lt;sup&gt;+&lt;/sup&gt;</td>
</tr>
<tr>
<td>Carboplatin</td>
<td>5-HT&lt;sub&gt;3&lt;/sub&gt; + DEX + NK&lt;sub&gt;1&lt;/sub&gt;</td>
</tr>
<tr>
<td>Moderate (other than carboplatin)</td>
<td>5-HT&lt;sub&gt;3&lt;/sub&gt; + DEX</td>
</tr>
<tr>
<td>Low</td>
<td>5-HT&lt;sub&gt;3&lt;/sub&gt; or DEX or DOP</td>
</tr>
<tr>
<td>Minimal</td>
<td>No routine prophylaxis</td>
</tr>
</tbody>
</table>

**NOTE:** Use NK<sub>1</sub>-receptor antagonists in refractory cases. For Grade 3 and 4 vomiting, consider intravenous administration. If vomiting is severe, consider antiemetic agents with complementary mechanisms of action and preventative agents.

*OLI: Olanzapine may be added, particularly if nausea is a concern.*

For more information, visit [https://www.mascc.org/antiemetic-guidelines](https://www.mascc.org/antiemetic-guidelines)
Olanzapine


Relevant practice guideline
Leitlinienprogramm Onkologie (Deutsche Krebsgesellschaft, Deutsche Krebshilfe, AWMF): Supportive Therapie bei onkologischen PatientInnen - Langversion 1.2, 2019,
AWMF Registernummer: 032/054OL, http://leitlinienprogramm-onkologie.de/Supportive-Therapie.95.0.html (Zugriff am 08.01.2020)


Prevention of Everolimus-Induced Stomatitis Using Dexamethasone Mouthwash

- Study design: single arm phase II-trial (SWISH)
- Cohort: 92 pts., treated with everolimus 10 mg and exemestane 25 mg
- Schedule: 10 mL of alcohol-free dexamethasone 15 mg per 5 mL oral solution (swish for 2 min and spit) for at least 8–12 weeks *
- Results: after 13 wks exposition all-grade incidence of stomatitis 27% (BOLERO 67%), ≥ grade 2 events 9% (BOLERO 27%)

* Alternatively Hydrocortison: Hydrocortisonacetat-Suspension 0,5 % with Lidocainhydrochlorid and Dexamethason (Germany: Armebuchrezeptur NRF 7.14.)

Rugo et al., Lancet Oncol 2017, Jones et al. Oncologist 2019


Mucositis


- Desinfecting / antiphlogistic measures:
  Mouth rinsing with infusions of chamomile or saliva, extracts of chamomile, etheric oils, polyvidon-iodine, hawthorn. Local therapy with crystal violet solution 0.5% or tincture myrthei, H. mormorae/Furoate = propylene glycol
- Mucosa protecting measures (during / after application of chemotherapy):
  Sucking ice cubes (especially from pineapple juice) during 5-fluorouracil- or HD-melphalan. Calcium folinate (Leucovorin-mouth gel®) every 4-6 hrs for HD-methotrexeate: do not start earlier than 24 hours after end of MTX-infusion (otherwise potential loss of efficacy of MTXI).
  Dexamethasone (Fenestra® Solution 5%) mouth rinsing.
- Local antymycotic treatment:
  Amphotericin B, nystatin, fluconazole
- Local antiviral treatment
  Aminoquinuride / tetracaine-HCl, Aciclovir®
- Local anaesthesia:
  Benzocaine, Doxepin 0.5% o.
- Pain Therapy: Opioids if indicated

Relevant practice guideline
Leitlinienprogramm Onkologie (Deutsche Krebsgesellschaft, Deutsche Krebshilfe, AWMF): Supportive Therapie bei onkologischen PatientInnen - Langversion 1.2, 2019,
AWMF Registernummer: 032/054OL, http://leitlinienprogramm-onkologie.de/Supportive-Therapie.95.0.html (Zugriff am 08.01.2020)
Diarrhea

- **Adsorbent agents**
  - **Carbo medicinialis; colloine / pectine, Al-Mg-silicate hydrate**

- **Analgetics, opioids**
  - **Loperamide; codeine, morphine IV, lintura opii (tinture of opium), butylscopolamine**

- **Pseudomembranous colitis**
  - **Metronidazole or (if not effective) vancomycin**

**Relevant practice guideline**

Leitlinienprogramm Onkologie (Deutsche Krebsgesellschaft, Deutsche Krebshilfe, AWMF): Supportive Therapie bei onkologischen PatientInnen - Langversion 1.2, 2019,
AWMF Registernummer: 032/054OL, http://leitlinienprogramm- onkologie.de/Supportive-Therapie.95.0.html (Zugriff am 08.01.2020)


treated with irinotecan." Support Care Cancer 2015;23;661-70.

### Constipation

**Important Side Effect of Opioid Treatment**

- **Bulking agents**
  - Psyllium, flaxseed (shredded)

- **Osmotic laxatives**
  - Macrogol > Lactulose (Cochrane review LoE 1a, AGO +)
  - Oral radio-opaque material: *ultima ratio e.g. sodium amidotrizoate*
  - Sorbitol

- **Motility stimulating laxatives**
  - Senna, Ricinus (Castor Oil), Bisacodyl, sodium-picosulfate

- **Emollients** (internal lubricants e.g. paraffin)
  - Opioid-receptor-antagonists (in opioid-related constipation)
    - Methylprednisolone

---

**Relevant practice guideline**

Leitlinienprogramm Onkologie (Deutsche Krebsgesellschaft, Deutsche Krebshilfe, AWMF): Supportive Therapie bei onkologischen PatientInnen - Langversion 1.2, 2019,

AWMF Registernummer: 032/054OL, http://leitlinienprogramm-onkologie.de/Supportive-Therapie.95.0.html (Zugriff am 08.01.2020)
9. Skin & Subcutaneous Tissue Disorders
(Alopecia)

Relevant practice guideline
Leitlinienprogramm Onkologie (Deutsche Krebgesellschaft, Deutsche Krebshilfe, AWMF): Supportive Therapie bei onkologischen PatientInnen - Langversion 1.2, 2019,
AWMF Registernummer: 032/054OL, http://leitlinienprogramm-onkologie.de/Supportive-Therapie.95.0.html (Zugriff am 08.01.2020)
Skin toxicities

- Avoidance of chemotherapy-induced alopecia by scalp cooling*
- Prophylaxis of hand-foot-syndrome using urea containing lotions (5-10%)
- Prophylaxis of nail changes and hand-foot-syndrome by cooling hands during docetaxel application

* Substance- and regimen specific

Relevant practice guideline
Leitlinienprogramm Onkologie (Deutsche Krebsgesellschaft, Deutsche Krebshilfe, AWMF): Supportive Therapie bei onkologischen PatientInnen - Langversion 1.2, 2019,
AWMF Registernummer: 032/054OL, http://leitlinienprogramm-onkologie.de/Supportive-Therapie.95.0.html (Zugriff am 08.01.2020)

Scalp Cooling:
### Scalp Cooling: Scalp Cooling Alopecia Prevention Trial (SCALP) and metaanalyses

**AGO: +/- LOE 2b B**
  - Primary Outcome: hair preservation
  - Cooling: 50.5% success vs. 49.5% failure
  - Non-cooling: 0% success vs. 100% failure
  - Fisher’s exact test p < 0.001

**Two Meta-analyses: AGO: +/- LOE 1b**
- Scalp cooling reduced relative risk (RR) of alopecia by 43% (RR, 0.57; 95% CI, 0.45-0.72; I² = 11%; P < .00001). (Rugo & Voigt, Clinical Breast Cancer 2018; 18(1):19-28.)
- Incidence rate of scalp metastasis (SC vs. no-SC) 0.61% vs. 0.41%; P = 0.43. (Rugo & Voigt; BCRT 2017)

10. MUSCULOSKELETAL & CONNECTIVE TISSUE DISORDERS
*(see Chapter Osteoncology)*

Relevant practice guideline
Leitlinienprogramm Onkologie (Deutsche Krebsgesellschaft, Deutsche Krebshilfe, AWMF): Supportive Therapie bei onkologischen PatientInnen - Langversion 1.2, 2019,
AWMF Registernummer: 032/054OL, http://leitlinienprogramm-onkologie.de/Supportive-Therapie.95.0.html (Zugriff am 08.01.2020)
11. General Disorders & Administration Site Conditions

Relevant practice guideline
Leitlinienprogramm Onkologie (Deutsche Krebgesellschaft, Deutsche Krebshilfe, AWMF): Supportive Therapie bei onkologischen PatientInnen - Langversion 1.2, 2019,
AWMF Registernummer: 032/054OL, http://leitlinienprogramm-onkologie.de/Supportive-Therapie.95.0.html (Zugriff am 08.01.2020)
### Relevant practice guidelines:

2. Leitlinienprogramm Onkologie (Deutsche Krebsgesellschaft, Deutsche Krebshilfe, AWMF): Supportive Therapie bei onkologischen PatientInnen - Langversion 1.3, 2020, AWMF Registernummer: 032/0540L

#### Dexrazoxane


#### Hyaluronic acid

<table>
<thead>
<tr>
<th>Oxford</th>
<th>LoE</th>
<th>GR</th>
<th>AGO</th>
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<tr>
<td></td>
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Extravasation of Chemotherapy
Role of Dexrazoxane/Hyaluronic Acid

Dexrazoxane for treatment of anthracyclines paravasates
Day 1: 1000 mg/m² (max. 2000 mg), IV 1–2 hrs
Day 2: 1000 mg/m² (max. 2000 mg), IV 1–2 hrs
Day 3: 500 mg/m² (max. 1000 mg), IV 1–2 hrs

Otherwise or if treatment with dexrazoxane is not indicated, following measures are recommended:
1. Local cooling: Ice packs for 15 min every 6 hrs, for at least 3 days, alternatively: 24 h continuous ice cooling
2. Local application (with swab) of dimethylsulfoxid 99% (DMSO) every 3-4 hours for at least 3 days (better 14 days), allow it to air dry. The interval may be extended to 6 hours from day 4 onward.

Hyaluronic Acid in case of Taxan/Vinorelbine Paravasates:
- 1–40 Amp a 150 IU
- 1 ml dissolvent (e.g. NaCl 0.9%)
- Local anaesthesia
- No thermotherapy after taxanes
- Dry warmth 4 x daily 20 min during vincaalkaloids

Relevant practice guideline
Leitlinienprogramm Onkologie (Deutsche Krebgesellschaft, Deutsche Krebshilfe, AWMF): Supportive Therapie bei onkologischen PatientInnen - Langversion 1.2, 2019,
AWMF Registernummer: 032/054OL, http://leitlinienprogramm-onkologie.de/Supportive-Therapie.95.0.html (Zugriff am 08.01.2020)
Further supportive and palliative issues

- Nutrition
- Pain management
- Palliative Care
Nutrition deficiency

- Nutrient deficiency is a common medical problem affecting 15-40% of cancer patients. It impairs their quality of life and can affect the success of treatment.
- Integration of nutritional advice into clinical management recommended
- For nutrition see S3 guideline Palliative care and supportive therapy

Klinische Ernährung:


Relevant practice guideline:


Relevant practice guideline:

Palliative Care

- All patients should be offered palliative care after the diagnosis of a non-curable cancer, regardless of whether a tumour-specific therapy is carried out.
- Specialized palliative care should be integrated into oncological decision-making processes, e.g. by participating in interdisciplinary tumor conferences.
- Patients with incurable cancer who are cared for in structures of specialized palliative care (palliative care ward, specialized outpatient care such as SAPV) should have access to oncological counseling.

https://www.leitlinienprogramm-onkologie.de/leitlinien/palliativmedizin/