



kreiskrankenhaus
emmendingen

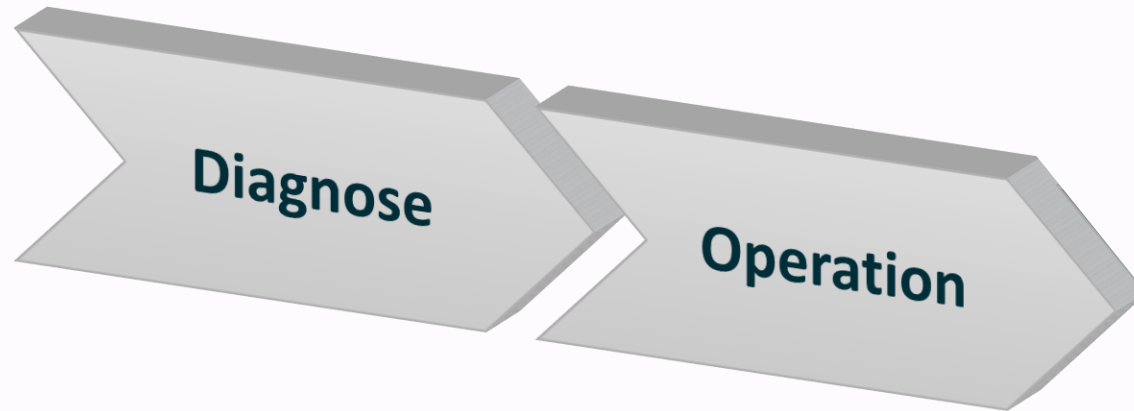


BRUSTZENTRUM
SÜDBADEN

Das metastasierte Mammakarzinom:

– bald eine gut behandelbare
chronische Erkrankung?

Dr. med. Roland Rein
November 2025





**Luminal A
Mamma-
karzinom**

hormonempfindlich,
langsam wachsend,
Her2-negativ

**Luminal B
Mamma-
karzinom**

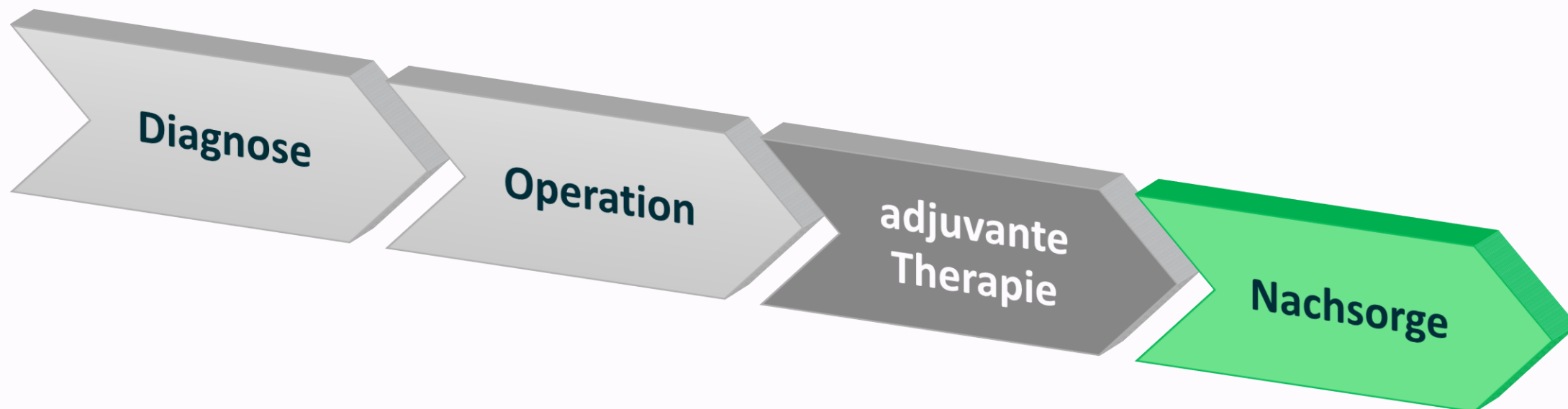
hormonempfindlich,
schneller wachsend,
Her2-negativ,
geringes oder höheres Risiko

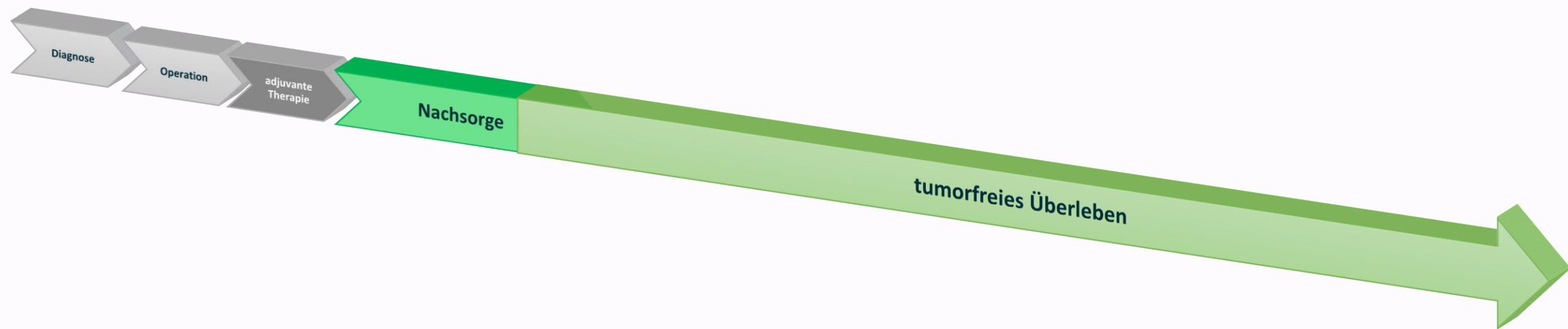
**HER2-
positives
Mamma-
karzinom**

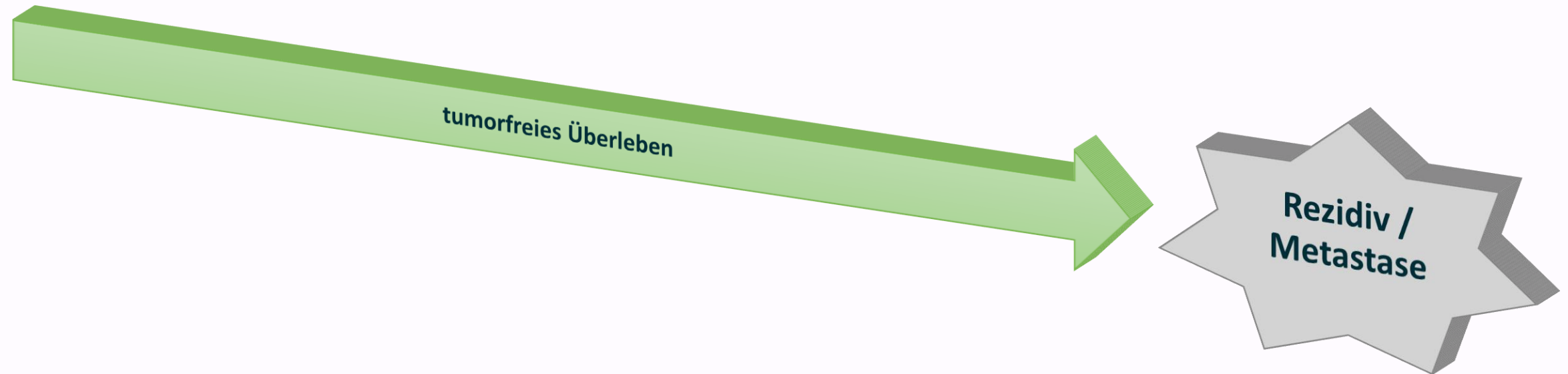
hormonempfindlich oder
hormonunempfindlich,
schnell wachsend,
Her2- positiv

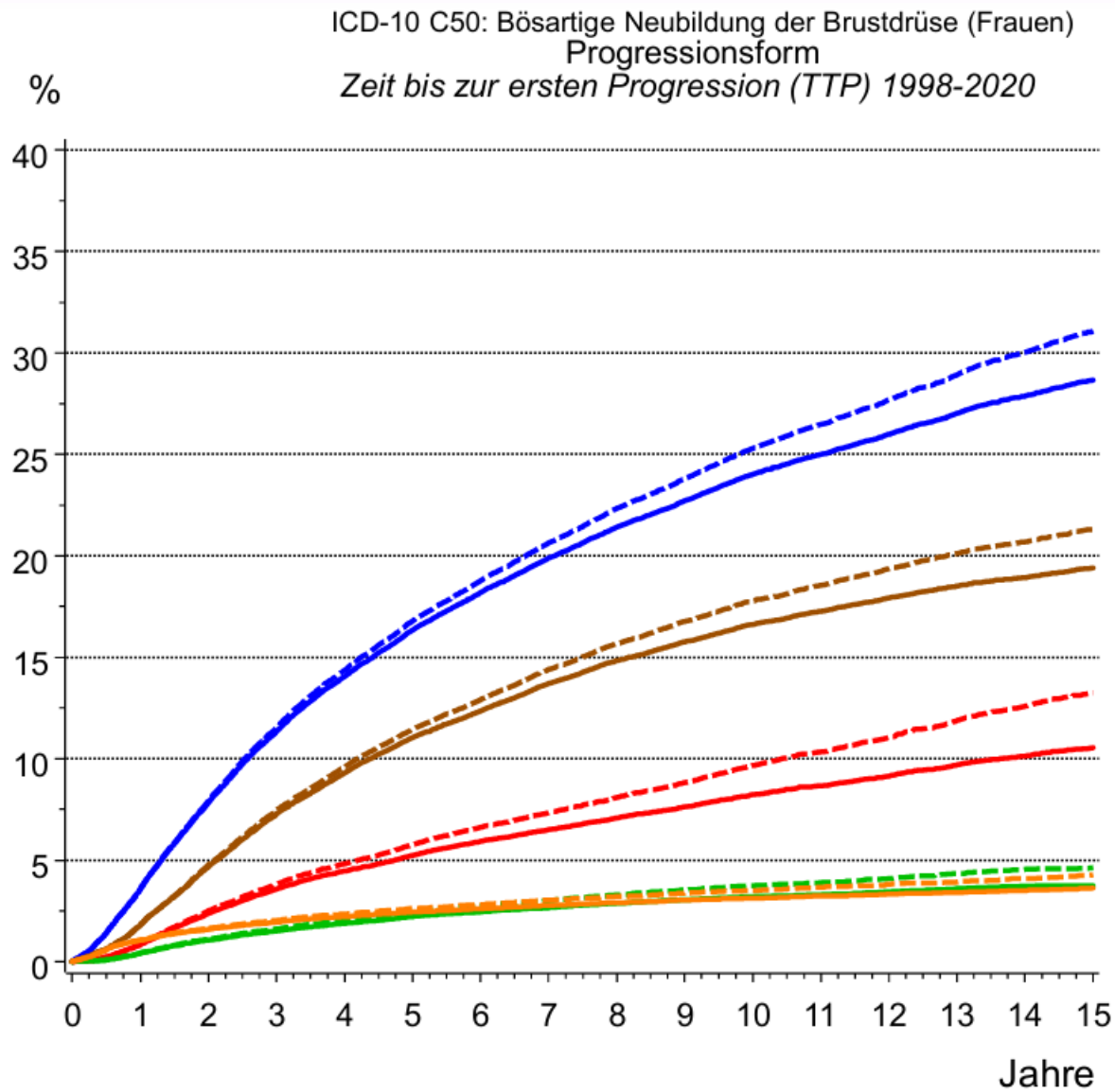
**triple-
negatives
Mamma-
karzinom**

hormon-
unempfindlich,
sehr schnell
wachsend,
Her2-negativ









Fernmetastasen

Rezidiv: Brust oder Brustwand

**Luminal A
Mamma-
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hormonempfindlich,
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hormonunempfindlich,
schnell wachsend,
Her2- positiv

**triple-
negatives
Mamma-
karzinom**

hormon-
unempfindlich,
sehr schnell
wachsend,
Her2-negativ

Luminal A
Mamma-
karzinom

Luminal B
Mamma-
karzinom

metastasierter hormonempfindlicher, HER2-negativer Brustkrebs



Metastase

Luminal A
Mamma-
karzinom

Luminal B
Mamma-
karzinom

Metastase

metastasierter hormonempfindlicher, HER2-negativer Brustkrebs



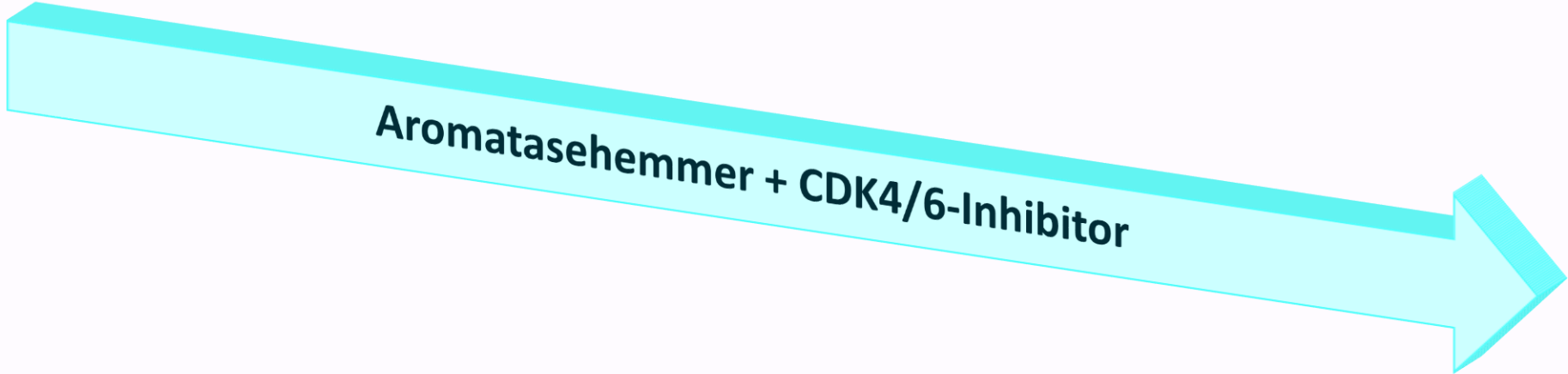
Aromatasehemmer + CDK4/6-Inhibitor



**metastasierter
hormonempfindlicher, HER2-negativer Brustkrebs**



**Knochen-
Metastase**



Aromatasehemmer + CDK4/6-Inhibitor

metastasierter hormonempfindlicher, HER2-negativer Brustkrebs

Knochen-
Metastase

Aromatasehemmer + CDK4/6-Inhibitor

Bisphosphonat oder Denosumab



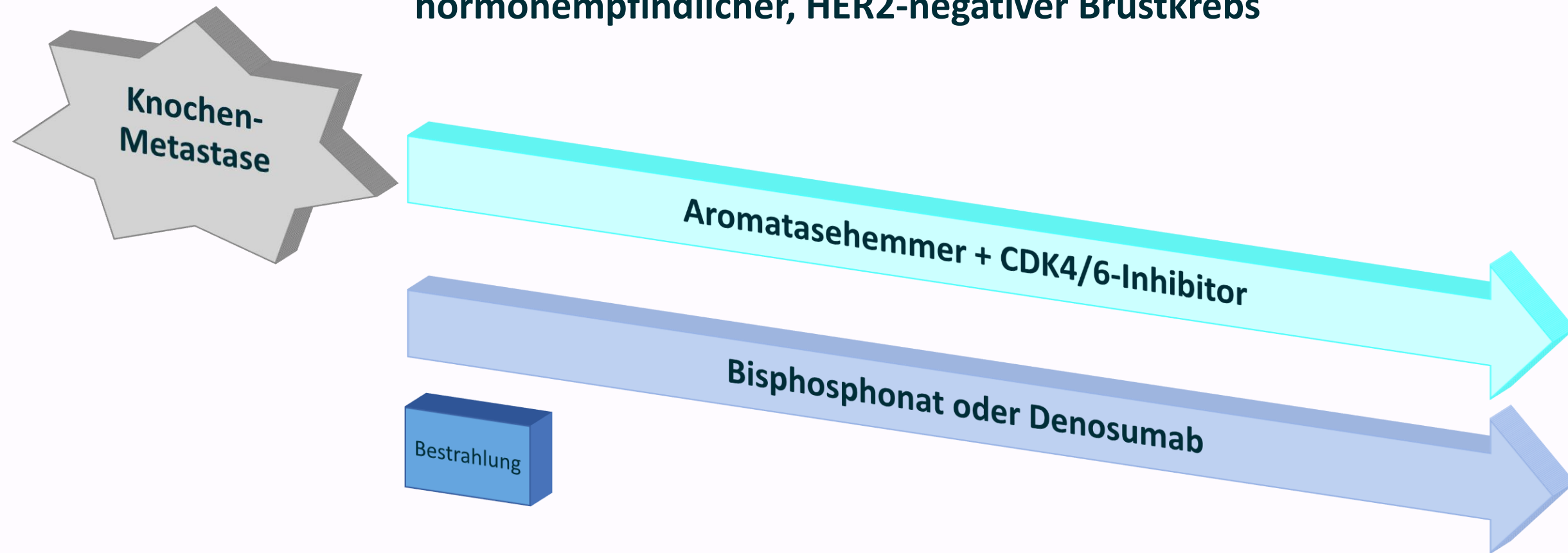
metastasierter hormonempfindlicher, HER2-negativer Brustkrebs

Knochen-
Metastase

Aromatasehemmer + CDK4/6-Inhibitor

Bisphosphonat oder Denosumab

Bestrahlung



metastasierter hormonempfindlicher, HER2-negativer Brustkrebs

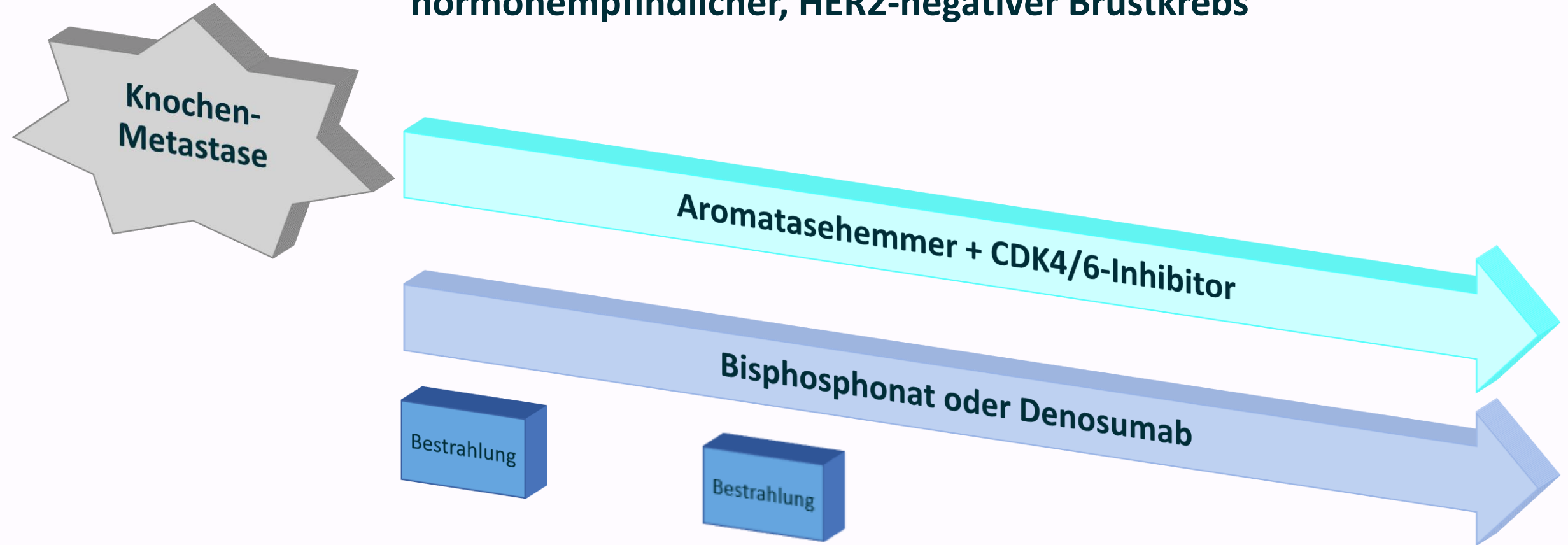
Knochen-
Metastase

Aromatasehemmer + CDK4/6-Inhibitor

Bisphosphonat oder Denosumab

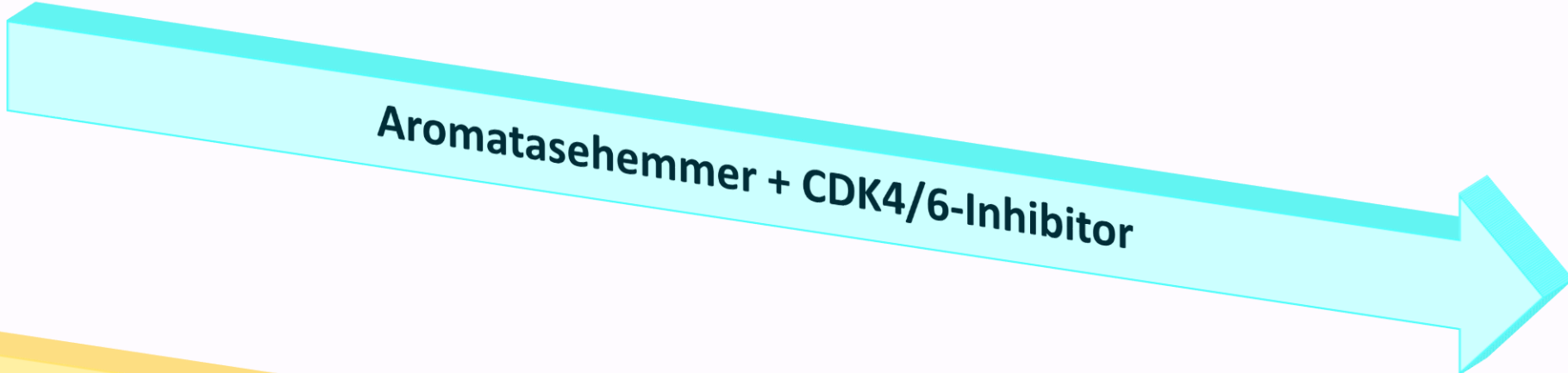
Bestrahlung

Bestrahlung

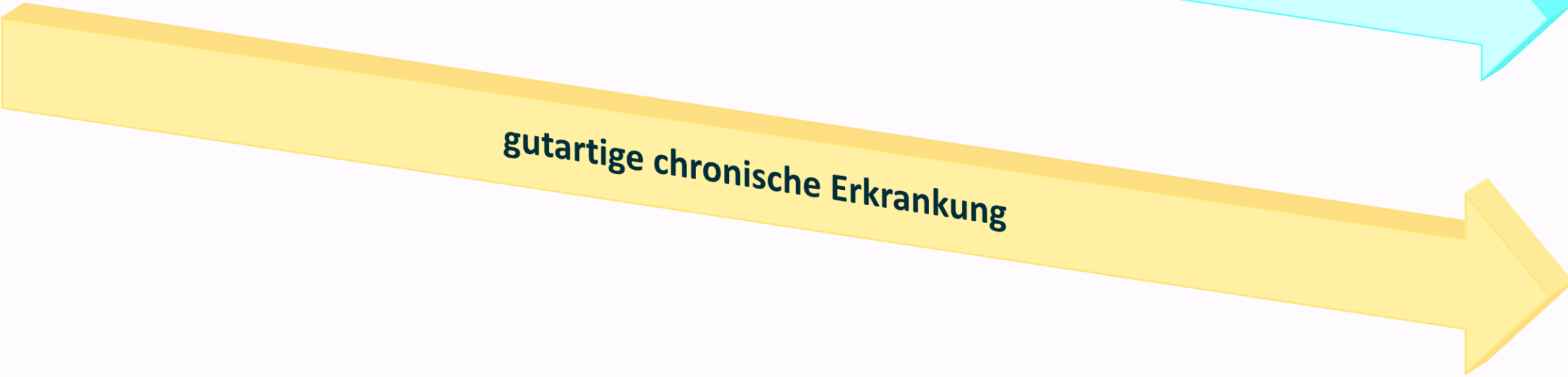




Metastase



Aromatasehemmer + CDK4/6-Inhibitor



gutartige chronische Erkrankung

Metastase

Aromatasehemmer + CDK4/6-Inhibitor

gutartige chronische Erkrankung

COPD

COPD

Original articles
Chronic obstructive pulmonary disease

Thorax 2012; **67** i-i Published Online First: 25 Oct 2012.

Long-term natural history of chronic obstructive pulmonary disease: severe exacerbations and mortality

Samy Suissa ^{1, 2}, Sophie Dell'Aniello ¹, Pierre Ernst ^{1, 3}

Correspondence to Professor Samy Suissa, Centre for Clinical Epidemiology, Jewish General Hospital, 3755 Cote Ste-Catherine, Montreal, Québec, Canada H3T 1E2; samy.suissa@mcgill.ca

73.000 Patienten, die wegen einer COPD in den Jahren 1990-2005 erstmals stationär behandelt wurden, wurden viele Jahre lang nachbeobachtet.

COPD

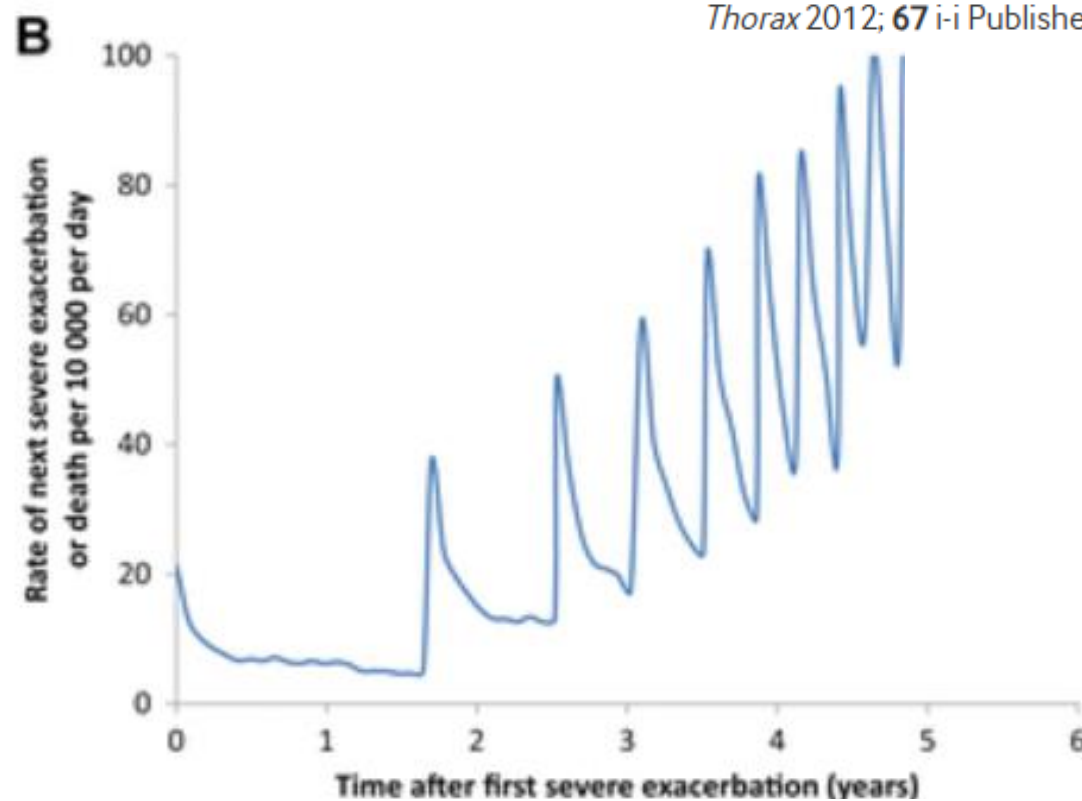


Figure 3

Hazard function of successive hospitalised chronic obstructive pulmonary disease (COPD) exacerbations (per 10000 per day) for the cohort of 73 106 patients from the time of their first ever hospitalisation for a COPD exacerbation over the follow-up period, with the time between successive exacerbations estimated

COPD

Thorax 2012; **67** i-i Published Online First: 25 Oct 2012.

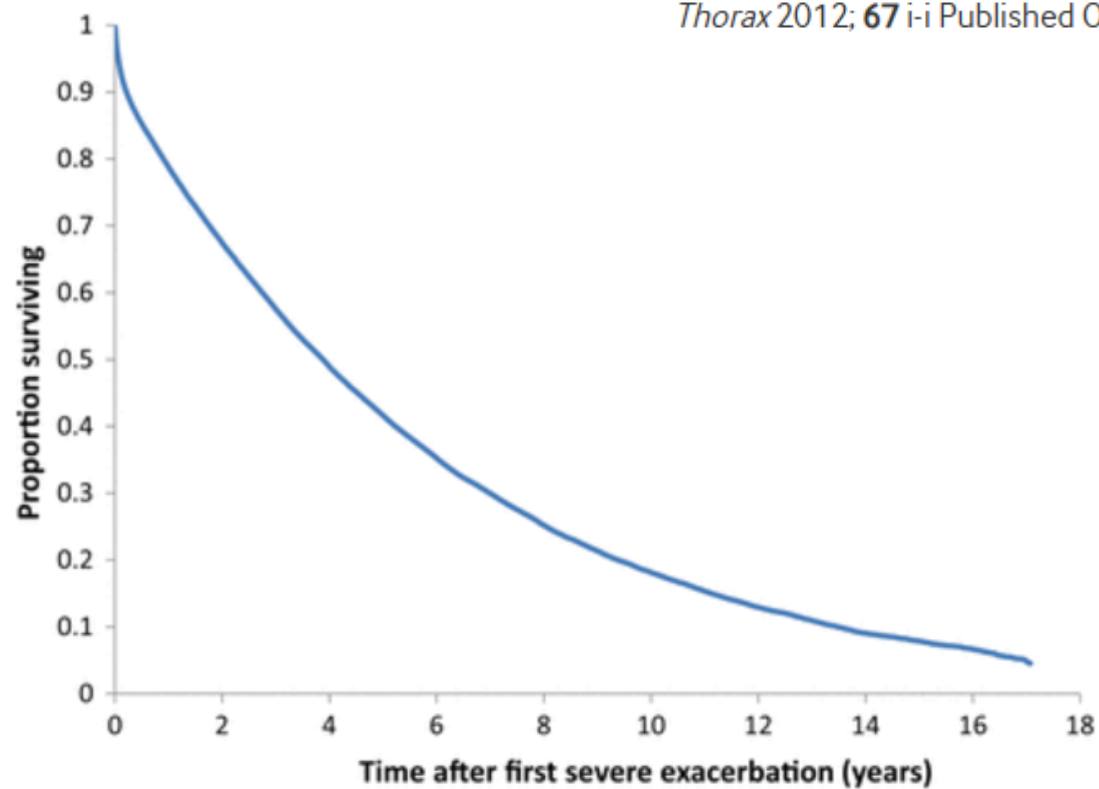


Figure 2

Kaplan–Meier survival function for the cohort of 73 106 patients from the time of their first ever hospitalisation for a chronic obstructive pulmonary disease exacerbation over the 17-year follow-up period.

COPD

Thorax 2012; **67** i-i Published Online First: 25 Oct 2012.

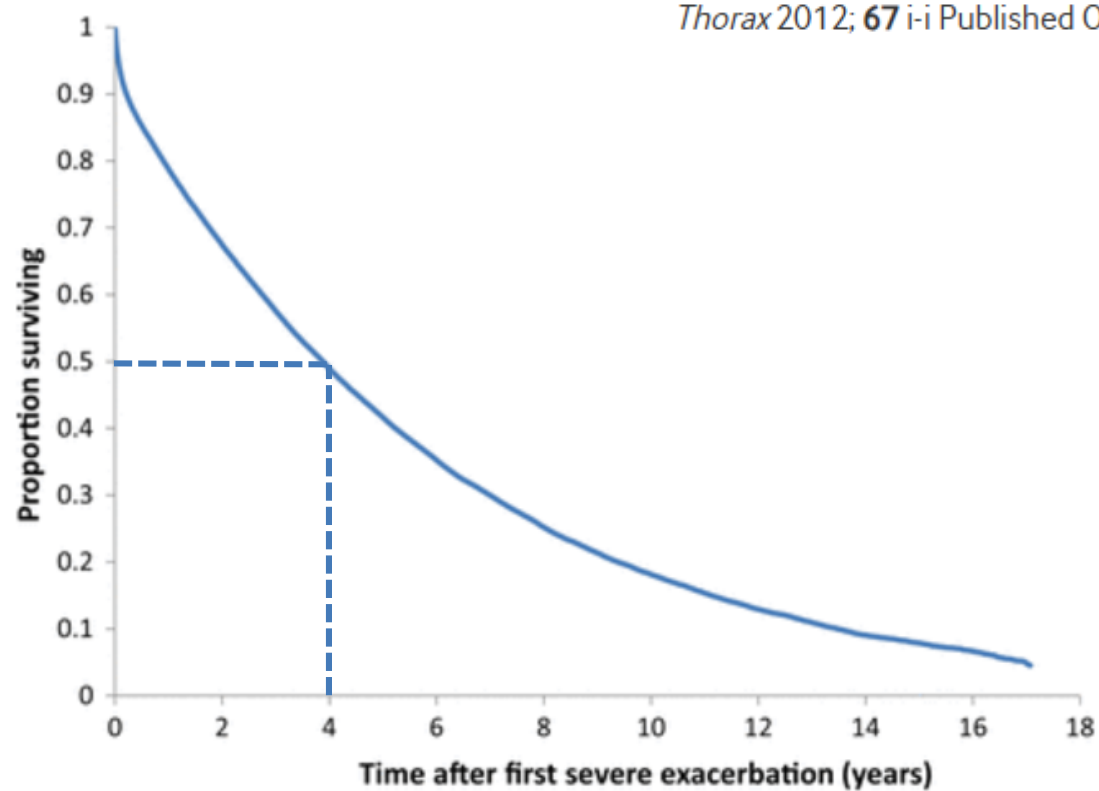


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Kaplan–Meier survival function for the cohort of 73 106 patients from the time of their first ever hospitalisation for a chronic obstructive pulmonary disease exacerbation over the 17-year follow-up period.

Metastase

Aromatasehemmer + CDK4/6-Inhibitor

Metastase

Aromatasehemmer + CDK4/6-Inhibitor

The NEW ENGLAND JOURNAL of MEDICINE

N ENGL J MED 386;10 NEJM.ORG MARCH 10, 2022

ORIGINAL ARTICLE

Overall Survival with Ribociclib plus Letrozole in Advanced Breast Cancer

Gabriel N. Hortobagyi, M.D., Salomon M. Stemmer, M.D.,
Howard A. Burris, M.D., Yoon-Sim Yap, M.D., Gabe S. Sonke, M.D., Ph.D.,
Lowell Hart, M.D., Mario Campone, M.D., Ph.D., Katarina Petrakova, M.D., Ph.D.,
Eric P. Winer, M.D., Wolfgang Janni, M.D., Ph.D., Pierfranco Conte, M.D., Ph.D.,
David A. Cameron, M.D., Fabrice André, M.D., Ph.D., Carlos L. Arteaga, M.D.,
Juan P. Zarate, M.D., Arunava Chakravarty, Ph.D., Tetiana Taran, M.D.,
Fabienne Le Gac, Ph.D., Pharm.D., Paolo Serra, M.Sc.,
and Joyce O'Shaughnessy, M.D.

Metastase

Aromatasehemmer + CDK4/6-Inhibitor

The NEW ENGLAND JOURNAL of MEDICINE

N ENGL J MED 386;10 NEJM.ORG MARCH 10, 2022

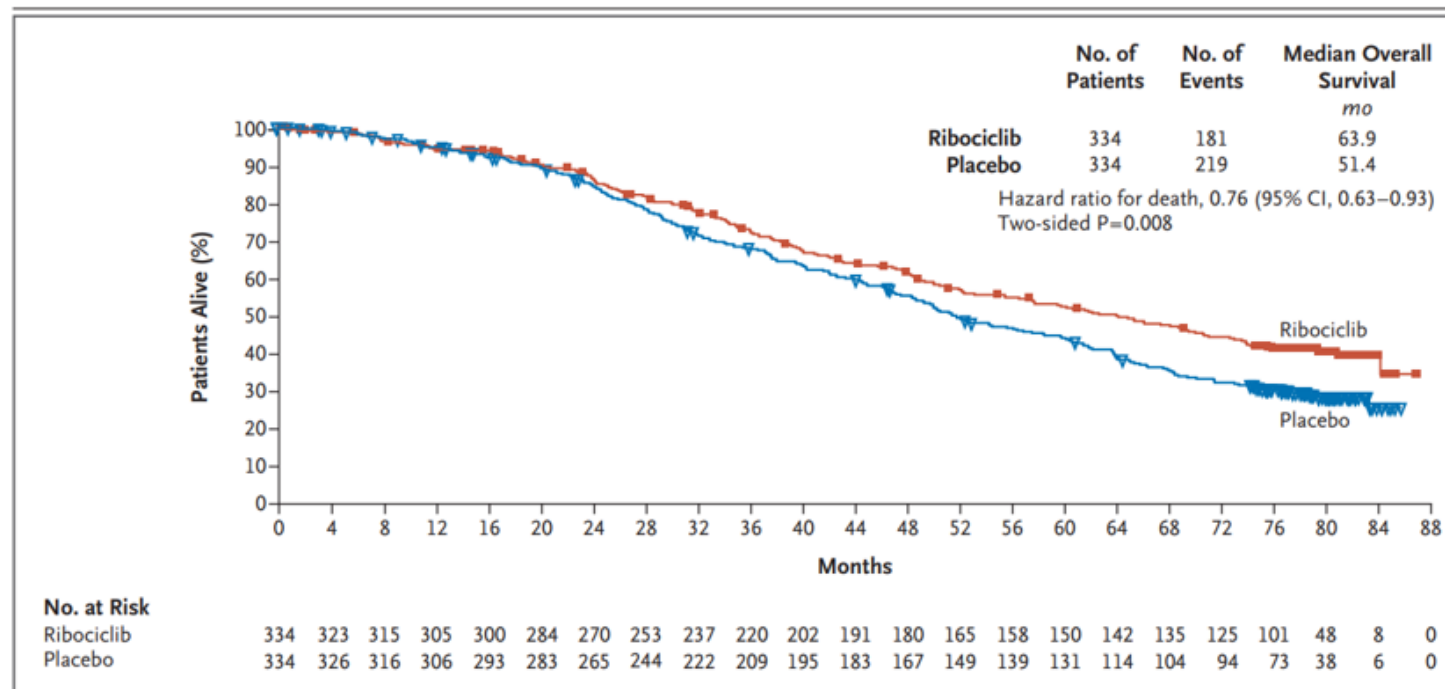


Figure 1. Overall Survival.

Patients in both groups also received letrozole. Squares (ribociclib group) and triangles (placebo group) indicate censored data.

Metastase

Aromatasehemmer + CDK4/6-Inhibitor

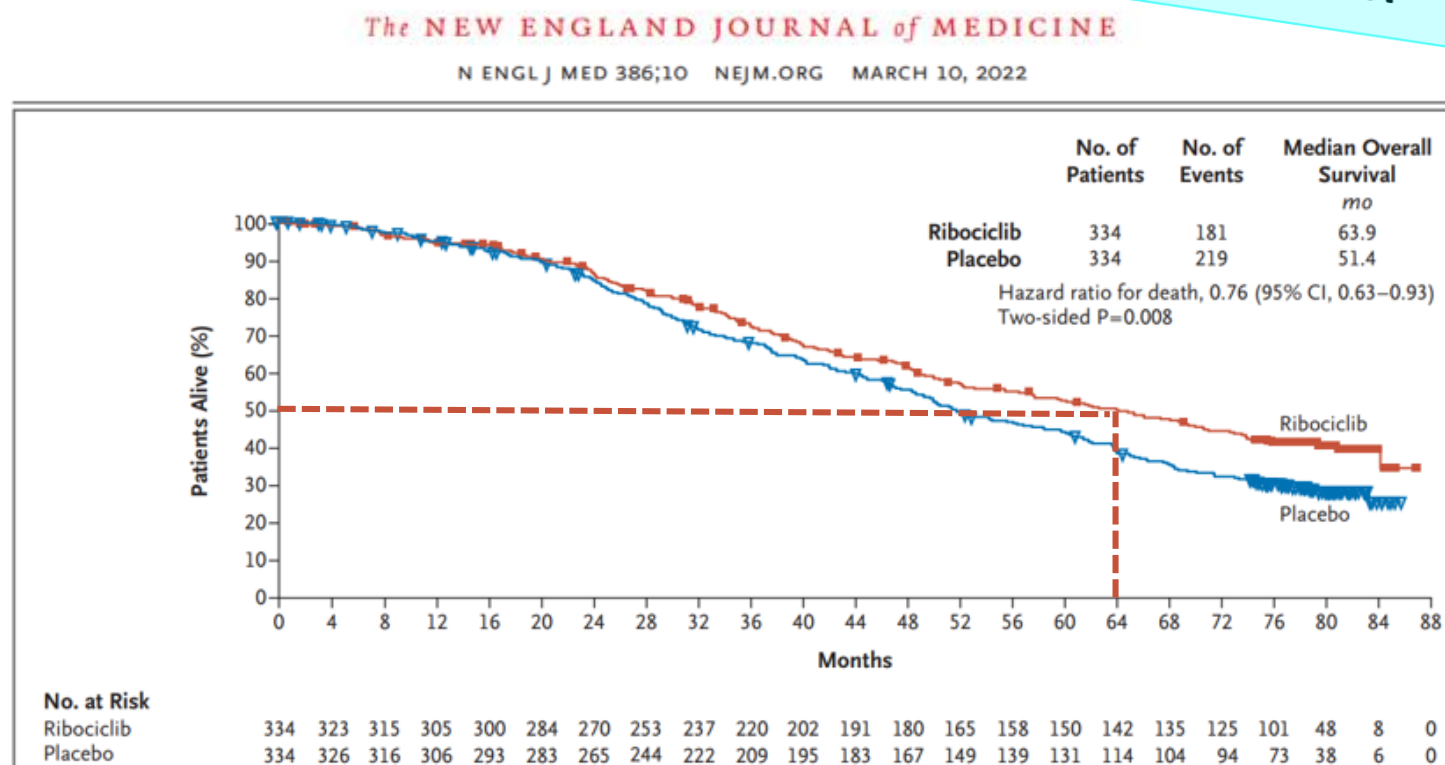
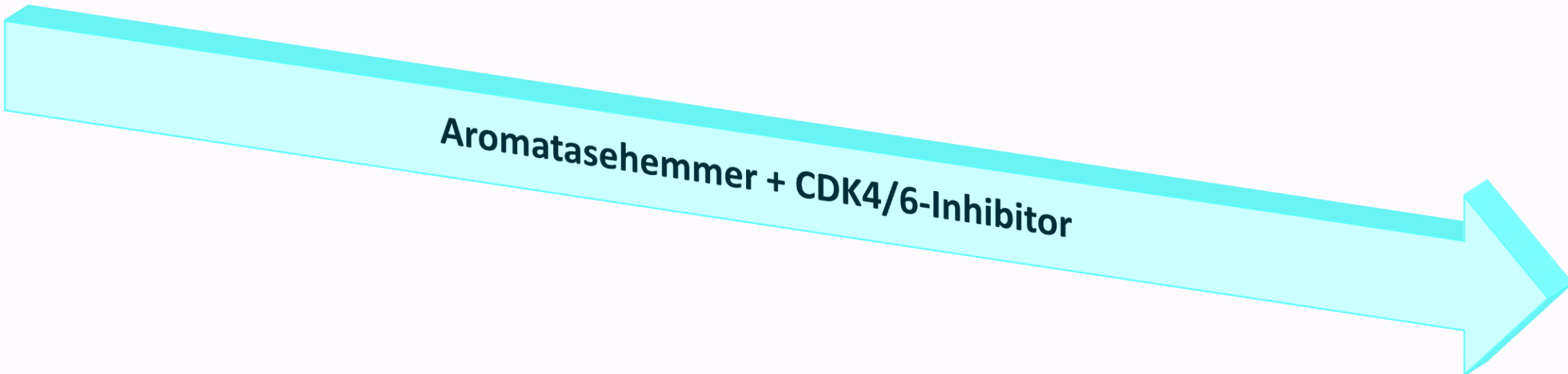


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**metastasierter
hormonempfindlicher, HER2-negativer Brustkrebs:
Verlaufskontrolle**



Aromatasehemmer + CDK4/6-Inhibitor

**metastasierter
hormonempfindlicher, HER2-negativer Brustkrebs:
Fortschreiten der Erkrankung**



Aromatasehemmer + CDK4/6-Inhibitor



**Fortschreiten
der
Erkrankung**

metastasierter hormonempfindlicher, HER2-negativer Brustkrebs: **Fortschreiten der Erkrankung**

Aromatasehemmer + CDK4/6-Inhibitor

bei Fortschreiten der Erkrankung:
Suche nach der Ursache
= Suche nach einem neuen Ziel
für eine zielgerichtete Therapie

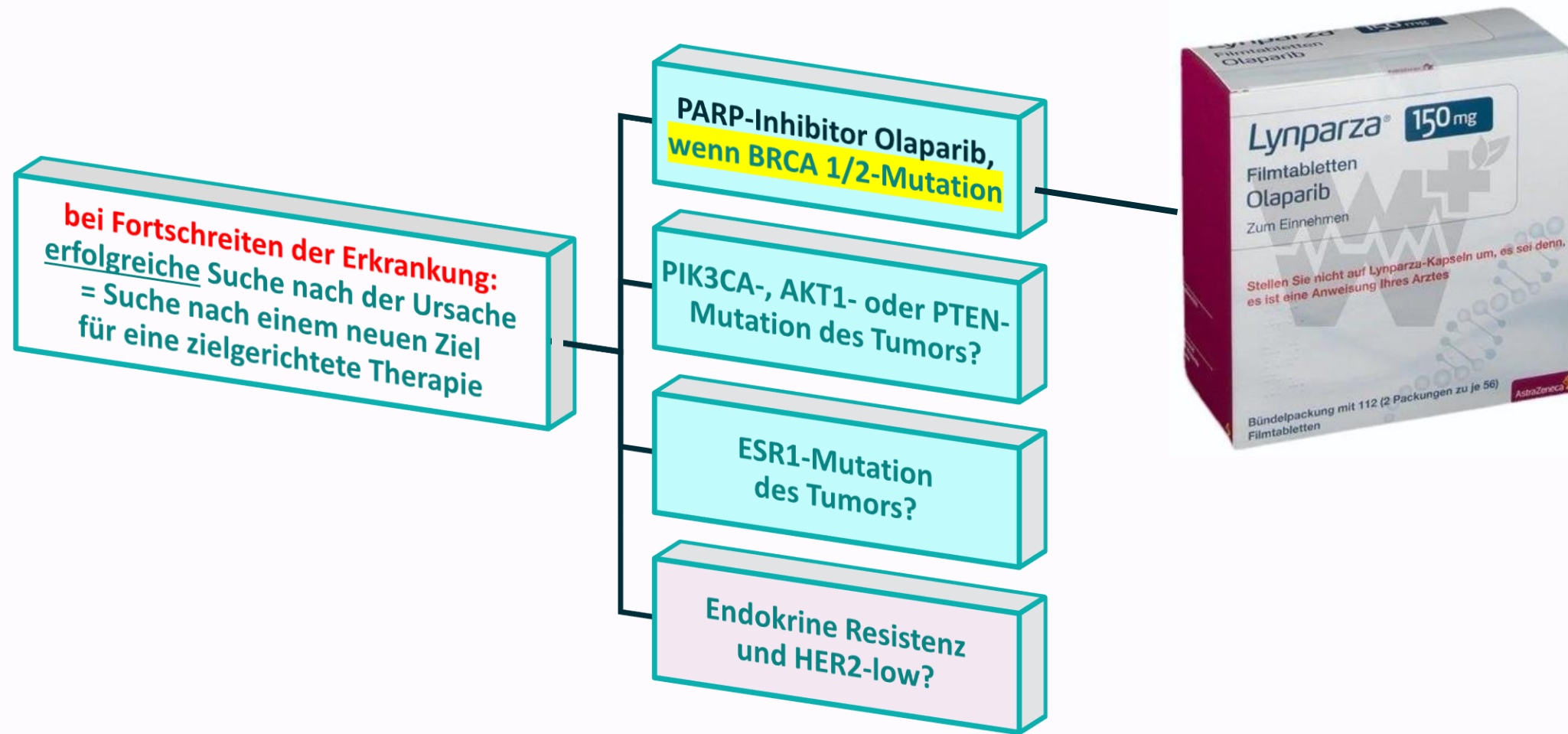
BRCA 1/2-Mutation?

PIK3CA-, AKT1- oder PTEN-
Mutation des Tumors?

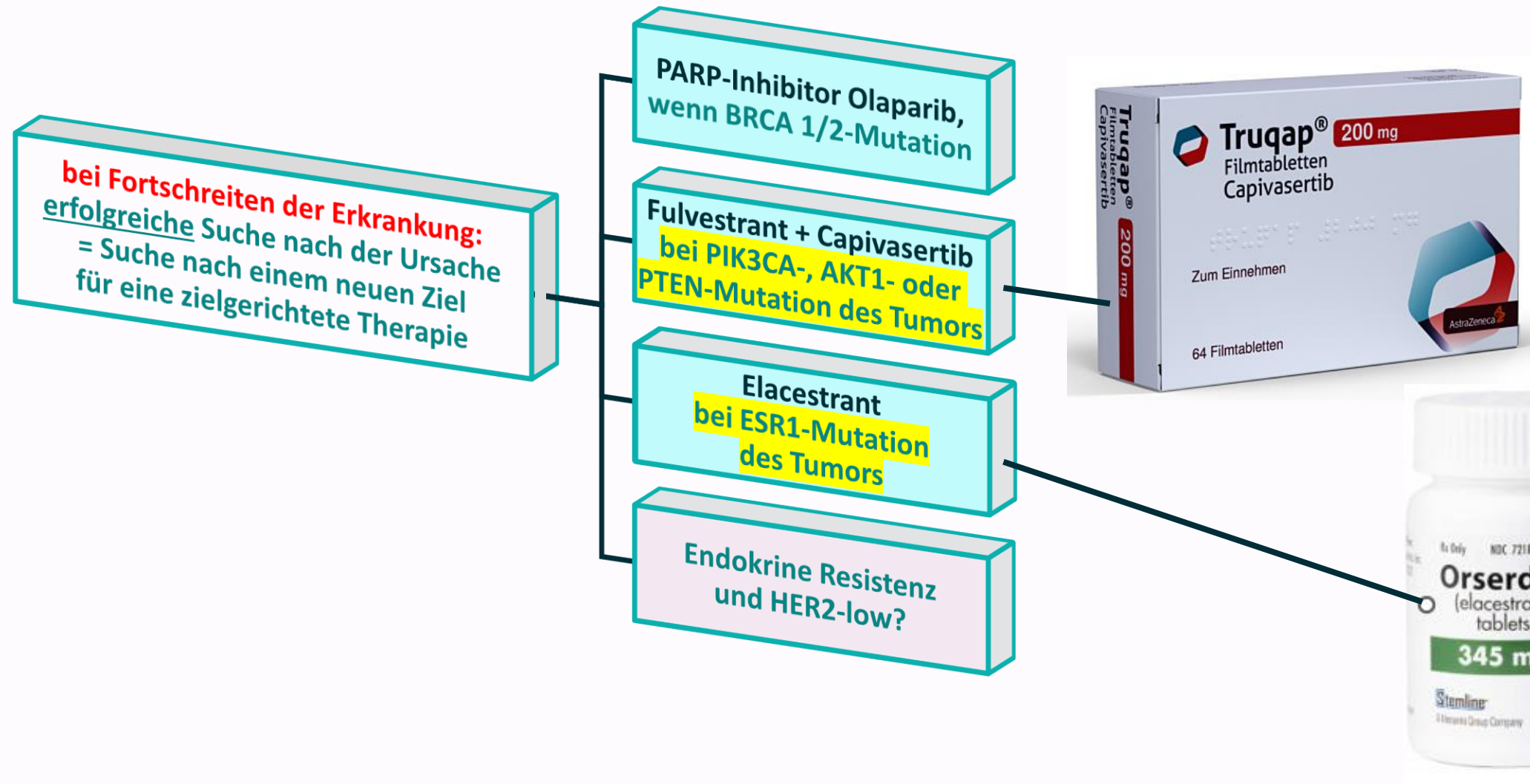
ESR1-Mutation
des Tumors?

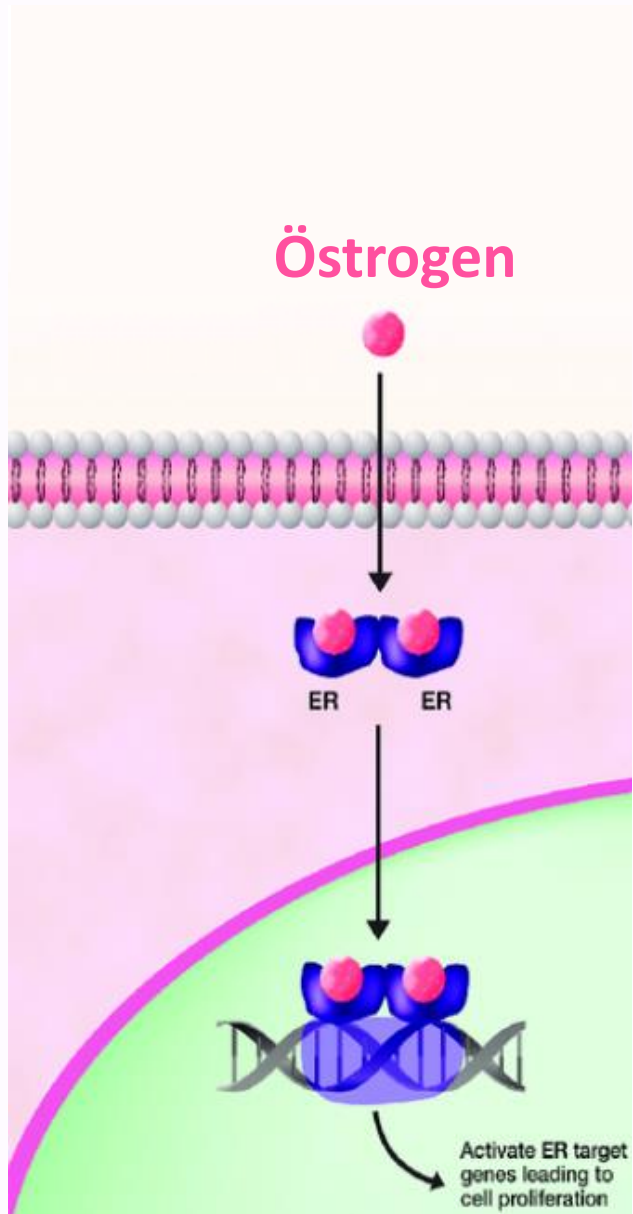
Endokrine Resistenz
und HER2-low?

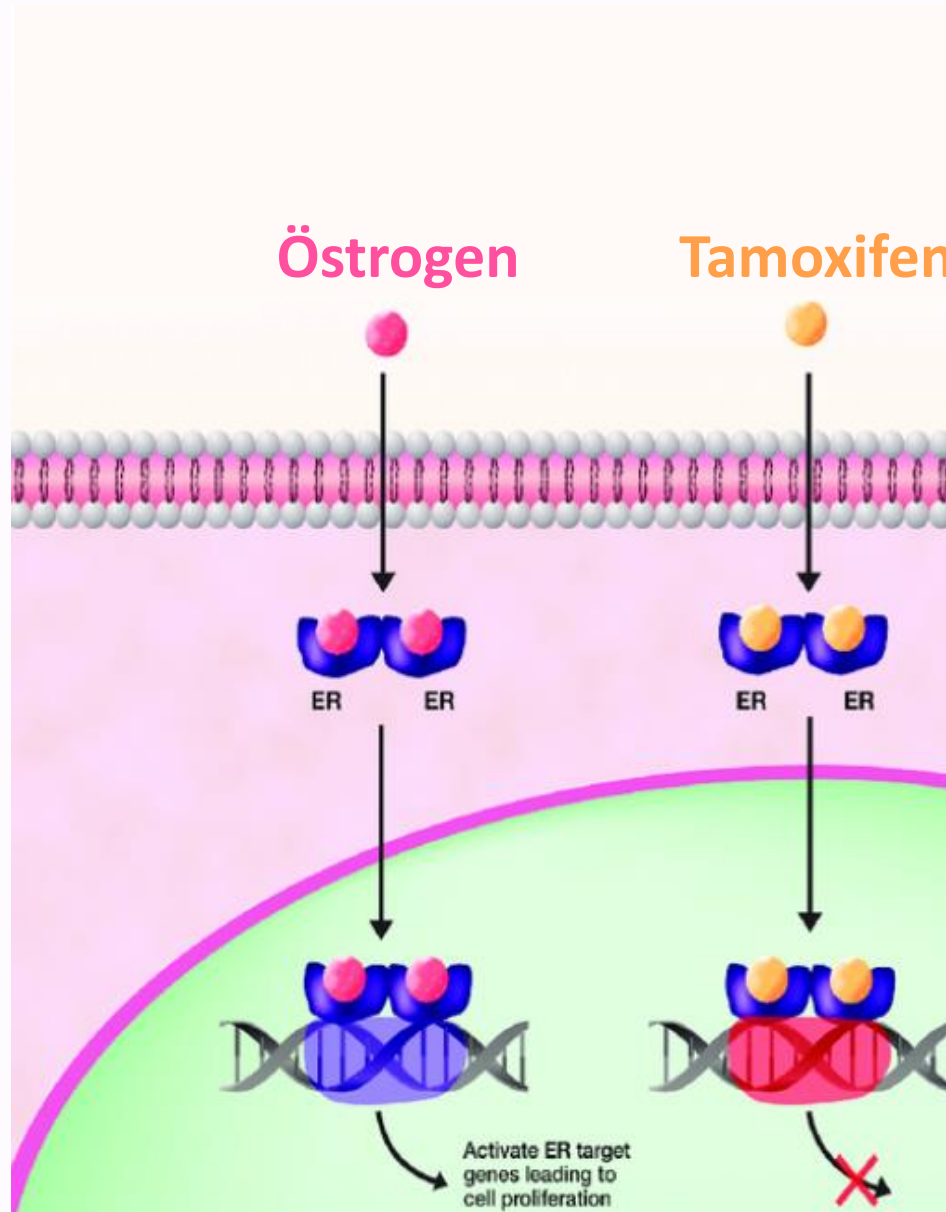
metastasierter hormonempfindlicher, HER2-negativer Brustkrebs:

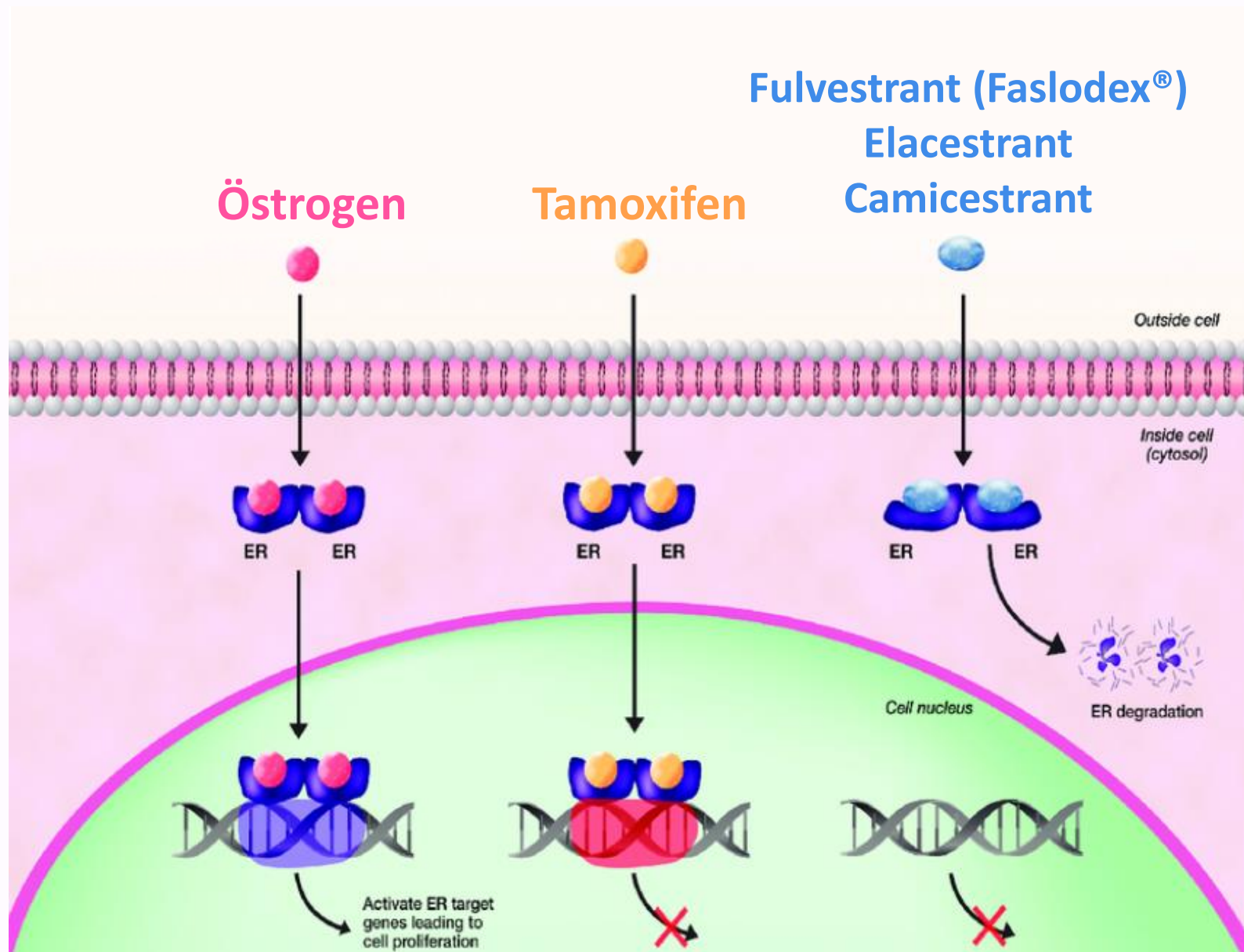


metastasierter hormonempfindlicher, HER2-negativer Brustkrebs:

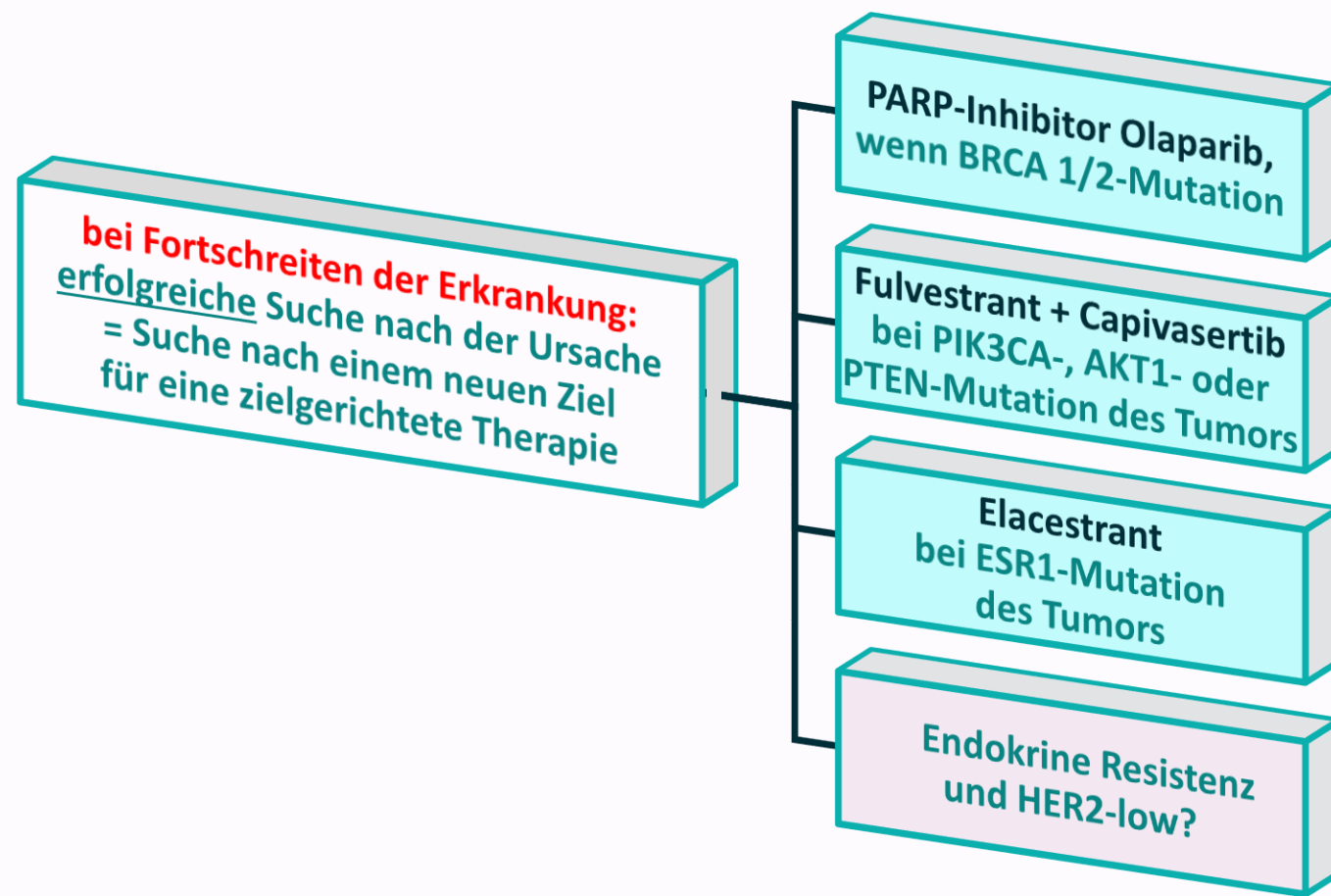




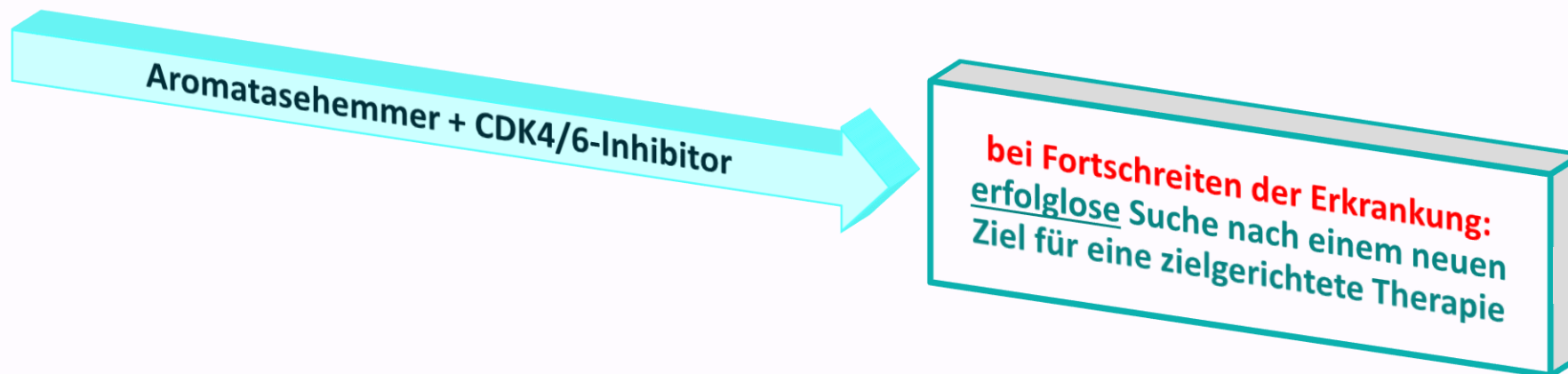




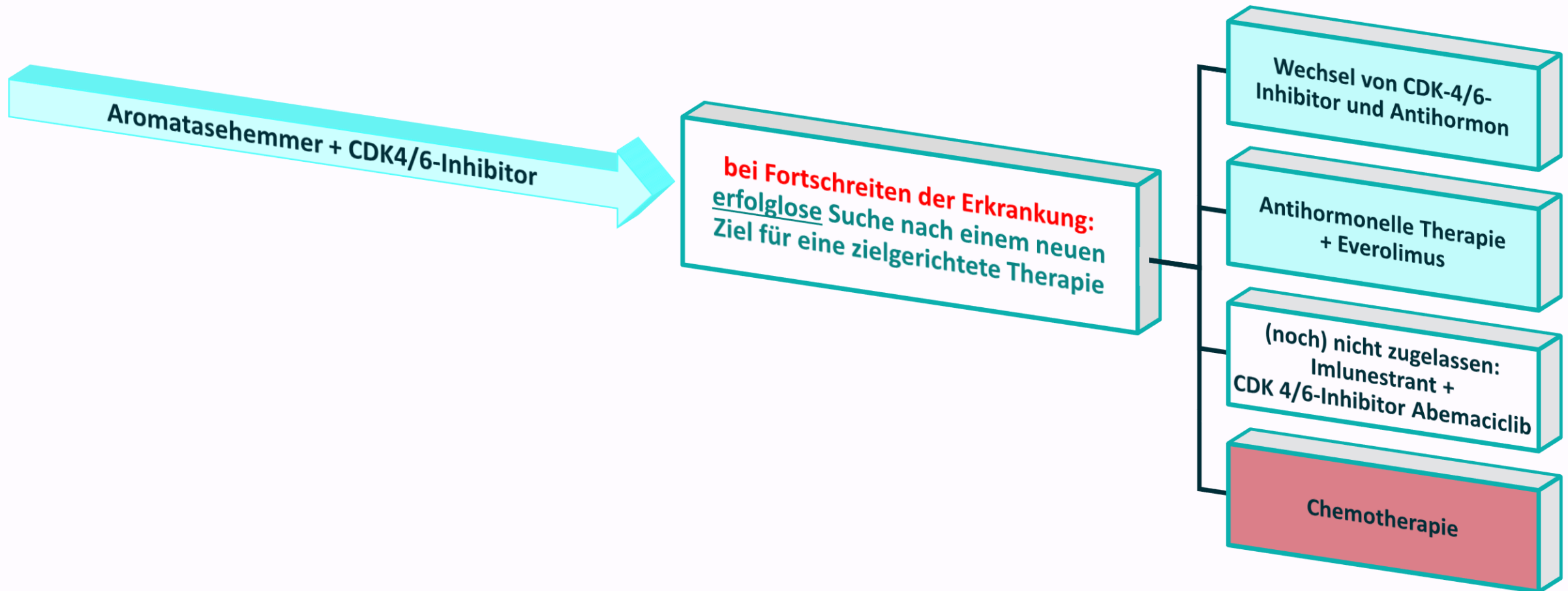
metastasierter hormonempfindlicher Brustkrebs, HER2-low:



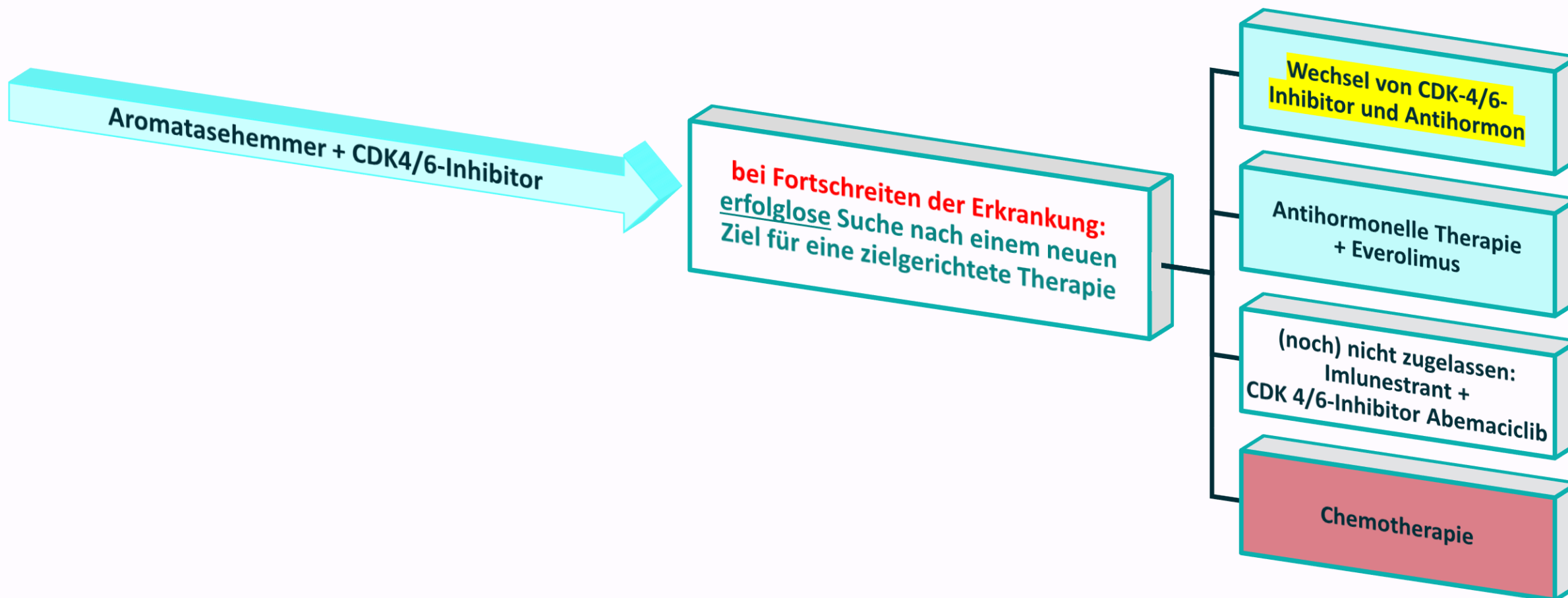
metastasierter hormonempfindlicher, HER2-negativer Brustkrebs:



metastasierter hormonempfindlicher, HER2-negativer Brustkrebs:



metastasierter hormonempfindlicher, HER2-negativer Brustkrebs:



metastasierter hormonempfindlicher, HER2-negativer Brustkrebs:



oder



Aromatasehemmer + CDK4/6-Inhibitor

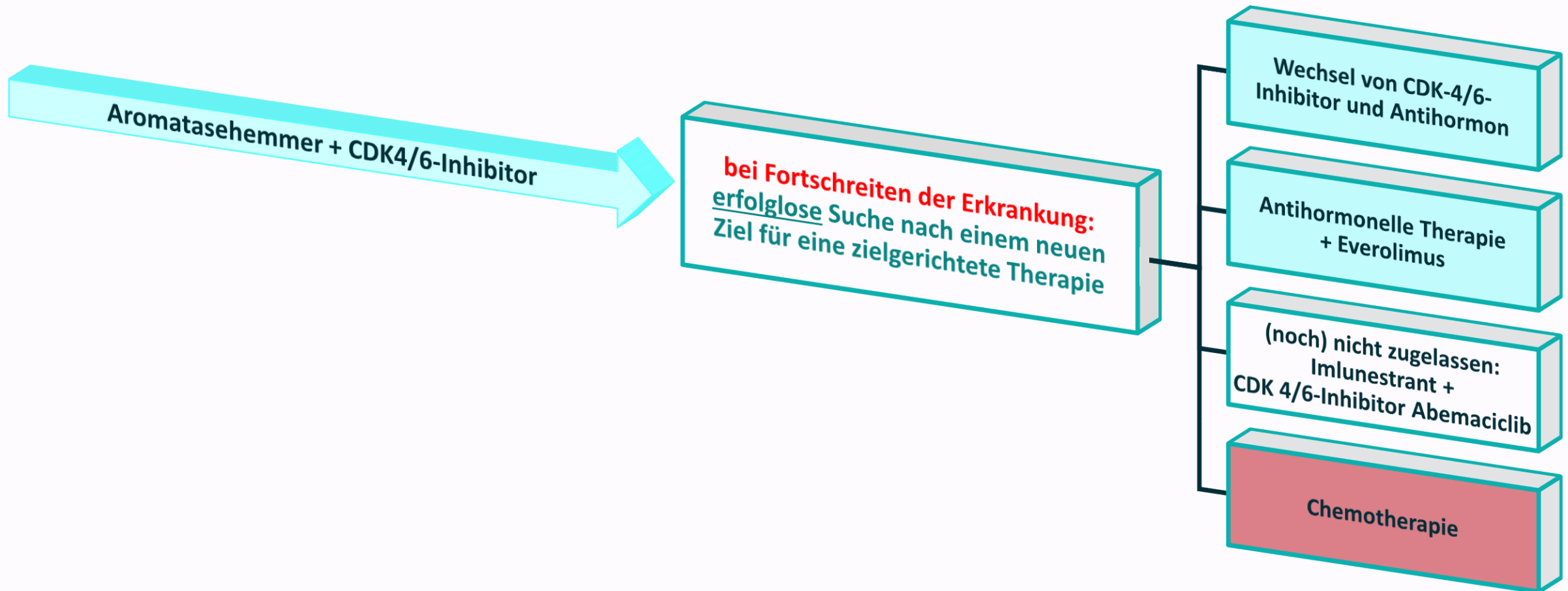


bei Fortschreiten der Erkrankung:
erfolglose Suche nach einem neuen
Ziel für eine zielgerichtete Therapie

Wechsel von
CDK4/6-Inhibitor und Antihormon



metastasierter hormonempfindlicher, HER2-negativer Brustkrebs:



**HER2-
positives
Mamma-
karzinom**

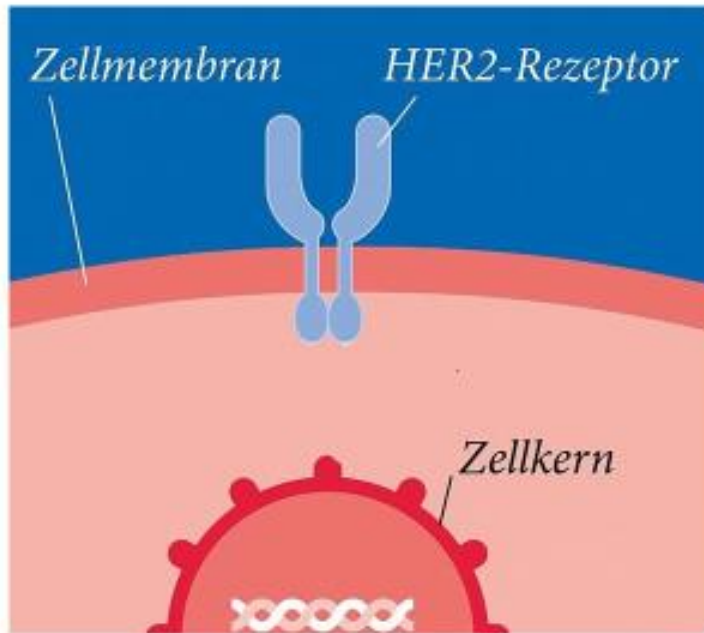
**hormonempfindlich oder
hormonunempfindlich,
schnell wachsend,
Her2- positiv**

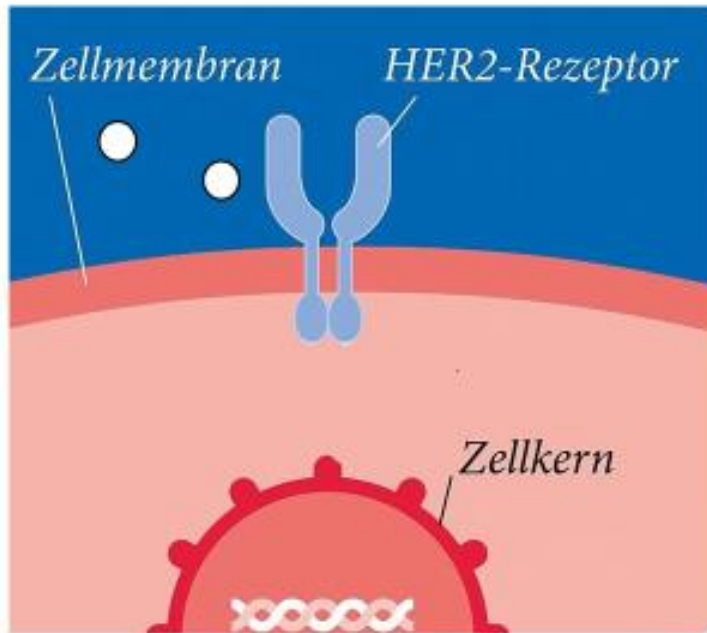
metastasierter HER2-positiver Brustkrebs:

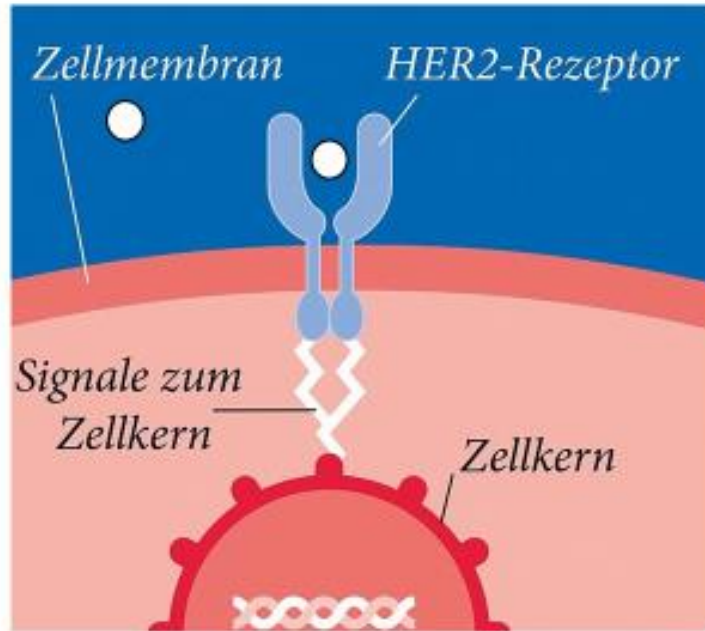
HER2-
positives
Mamma-
karzinom



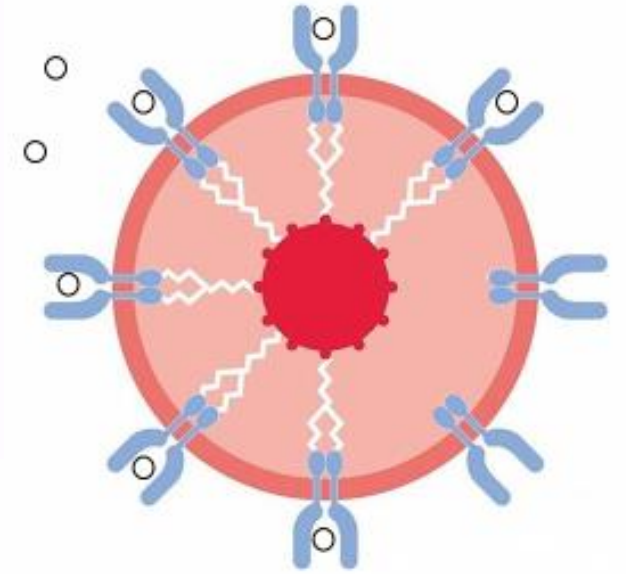
Metastase



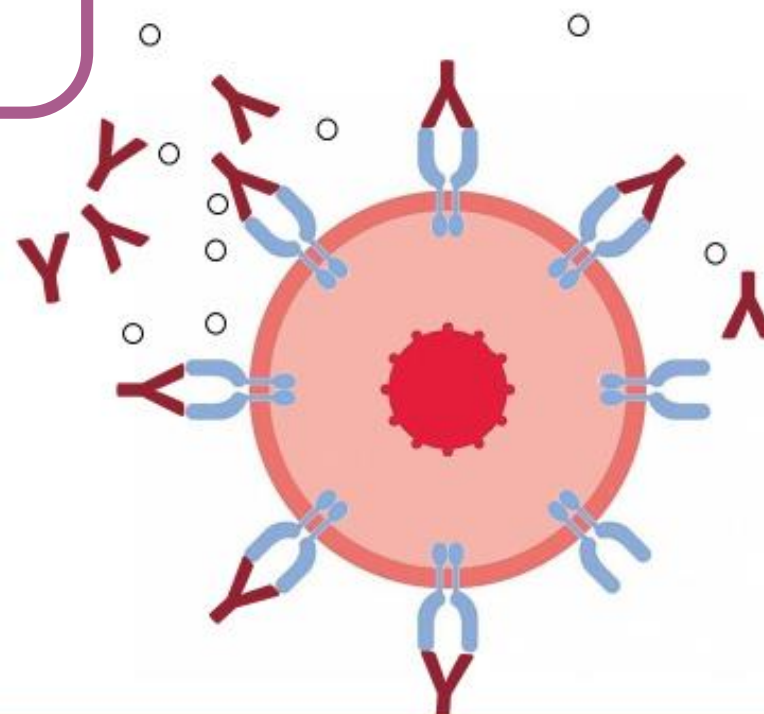




HER2- positives Mamma- karzinom

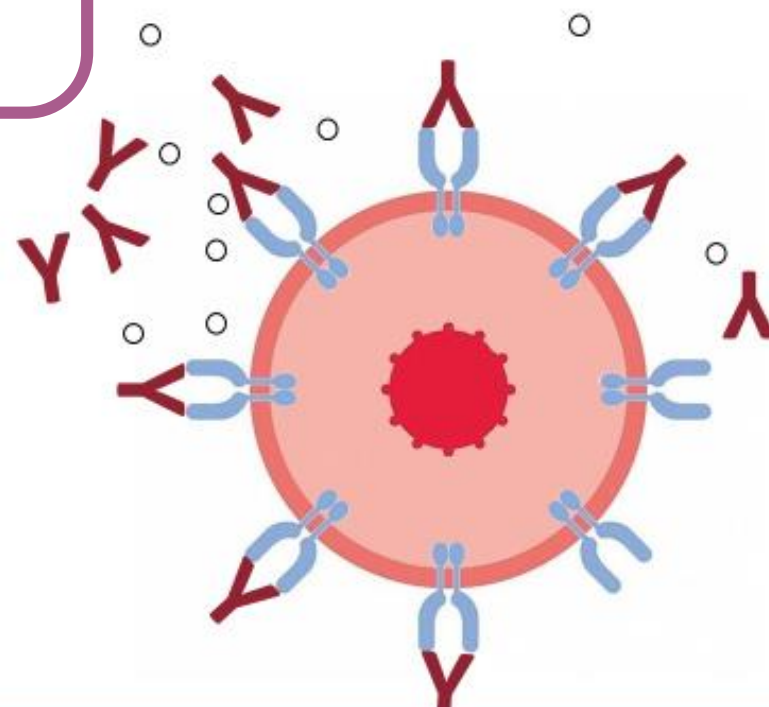


**HER2-
positives
Mamma-
karzinom**



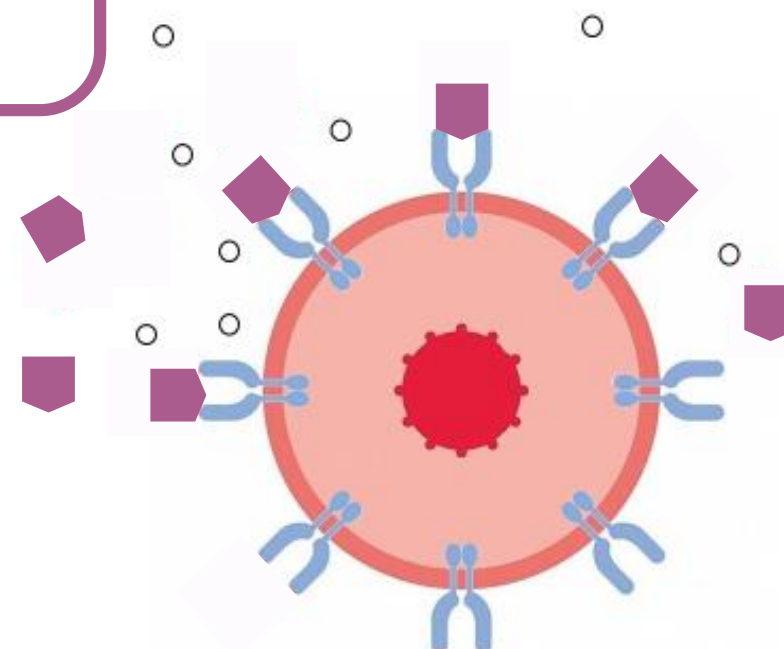
HER2- positives Mamma- karzinom

Y Trastuzumab
(Herceptin®)

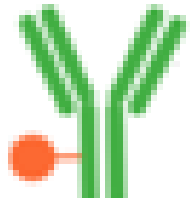


HER2- positives Mamma- karzinom

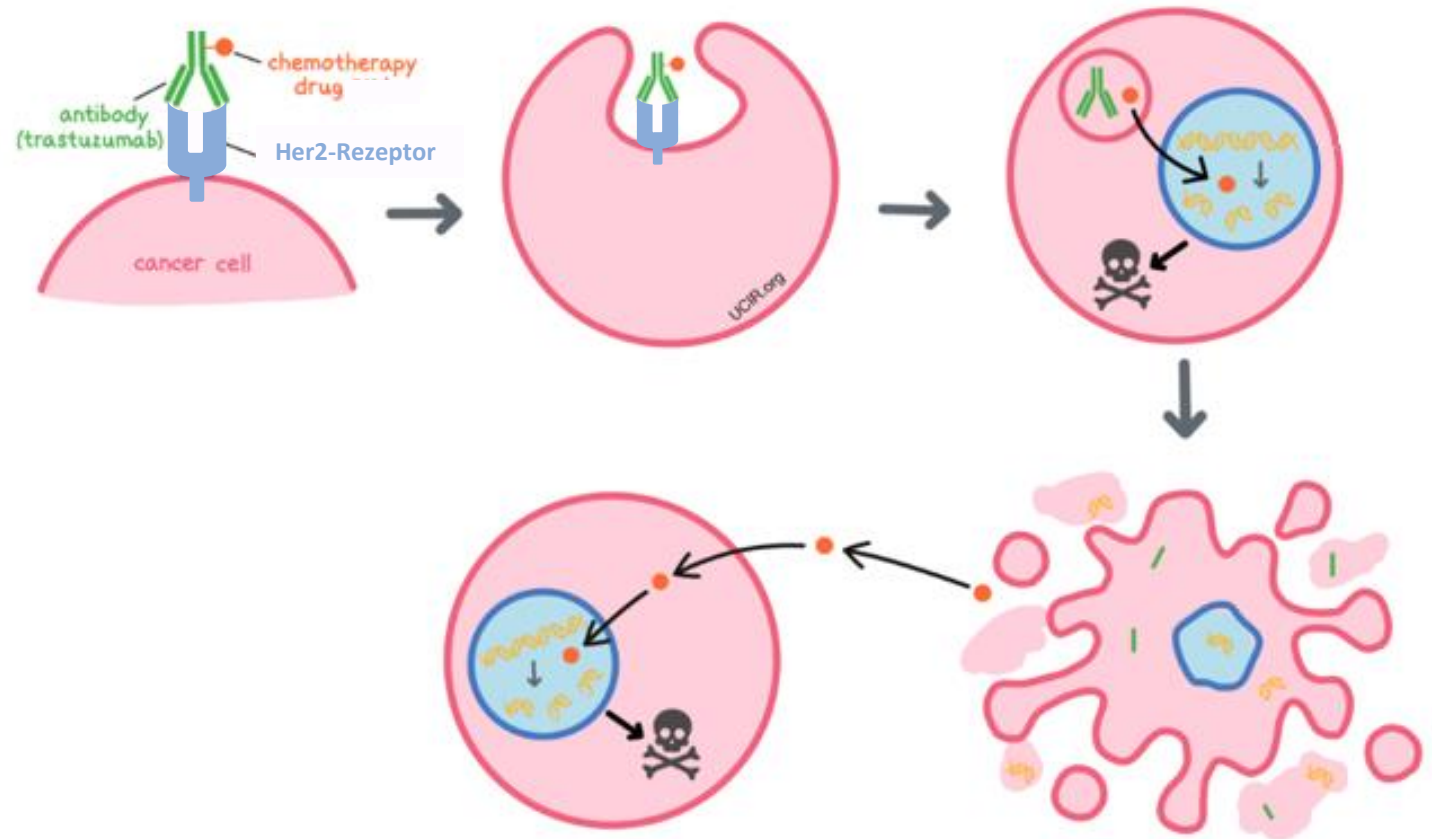
 Pertuzumab
(Perjeta®)



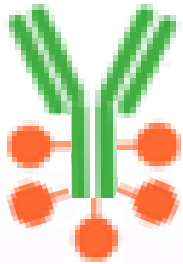
ADCs = Antibody-drug-conjugates



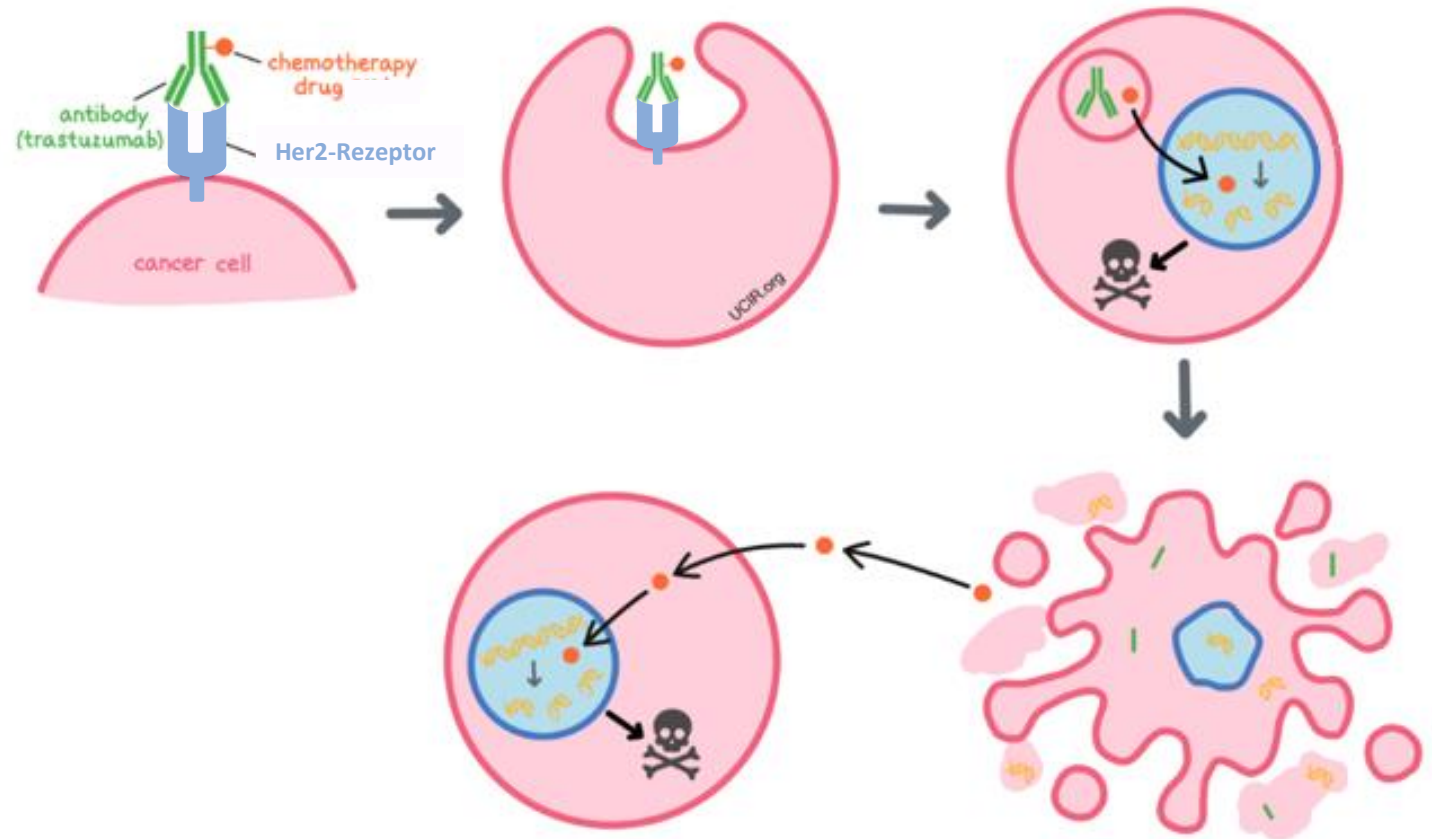
Trastuzumab-Emtansin = T-DM1
(Kadcyla®)



ADCs = Antibody-drug-conjugates



Trastuzumab-Deruxtecan = T-DXd
(Enhertu®)



metastasierter HER2-positiver Brustkrebs:

HER2-
positives
Mamma-
karzinom

Metastase

Anti-HER2-Therapie in Abhängigkeit von der adjuvanten Therapie

metastasierter HER2-positiver Brustkrebs:

HER2-
positives
Mamma-
karzinom

Metastase

Trastuzumab Pertuzumab
(Herceptin®) (Perjeta®)

Trastuzumab-Emtansin = T-DM1
(Kadcyla®)

Trastuzumab-Deruxtecan = T-DXd
(Enhertu®)

Anti-HER2-Therapie in Abhängigkeit von der adjuvanten Therapie

**Luminal A
Mamma-
karzinom**

**Luminal B
Mamma-
karzinom**

**HER2-
positives
Mamma-
karzinom**

**triple-
negatives
Mamma-
karzinom**

**Luminal A
Mamma-
karzinom**

**Luminal B
Mamma-
karzinom**

**HER2-
positives
Mamma-
karzinom**

**triple-
negatives
Mamma-
karzinom**

**Luminal A
Mamma-
karzinom**

Mamma-
karzinom
Her2-low, HR+

**Luminal B
Mamma-
karzinom**

Mamma-
karzinom
Her2-low, HR+

**HER2-
positives
Mamma-
karzinom**

**triple-
negatives
Mamma-
karzinom**

Mamma-
karzinom
Her2-low, HR-

Luminal A
Mamma-
karzinom

Mamma-
karzinom
Her2-low, HR+

Luminal B
Mamma-
karzinom

Mamma-
karzinom
Her2-low, HR+

HER2-
positives
Mamma-
karzinom

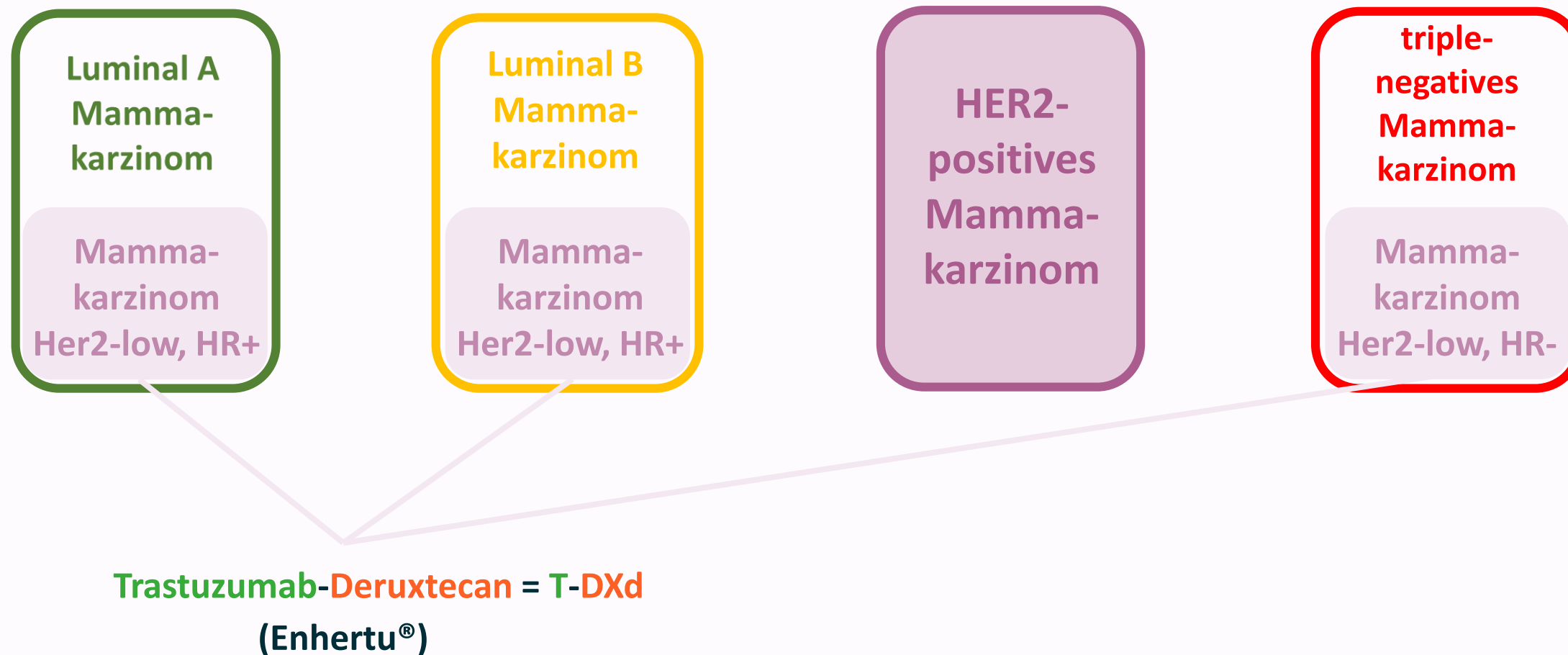
Trastuzumab Pertuzumab
(Herceptin®) (Perjeta®)

Trastuzumab-Emtansin = T-DM1
(Kadcyla®)

Trastuzumab-Deruxtecan = T-DXd
(Enhertu®)

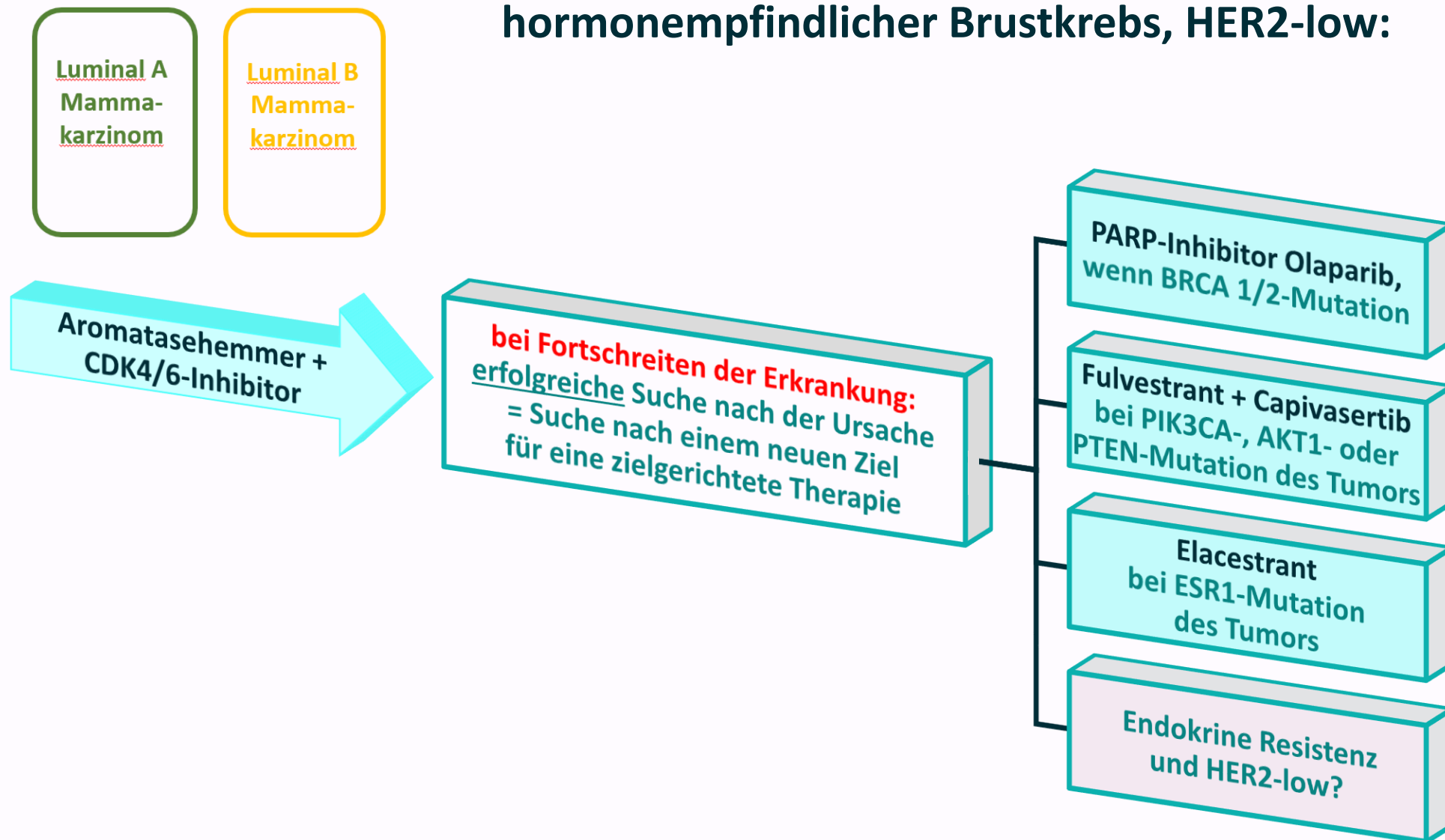
triple-
negatives
Mamma-
karzinom

Mamma-
karzinom
Her2-low, HR-

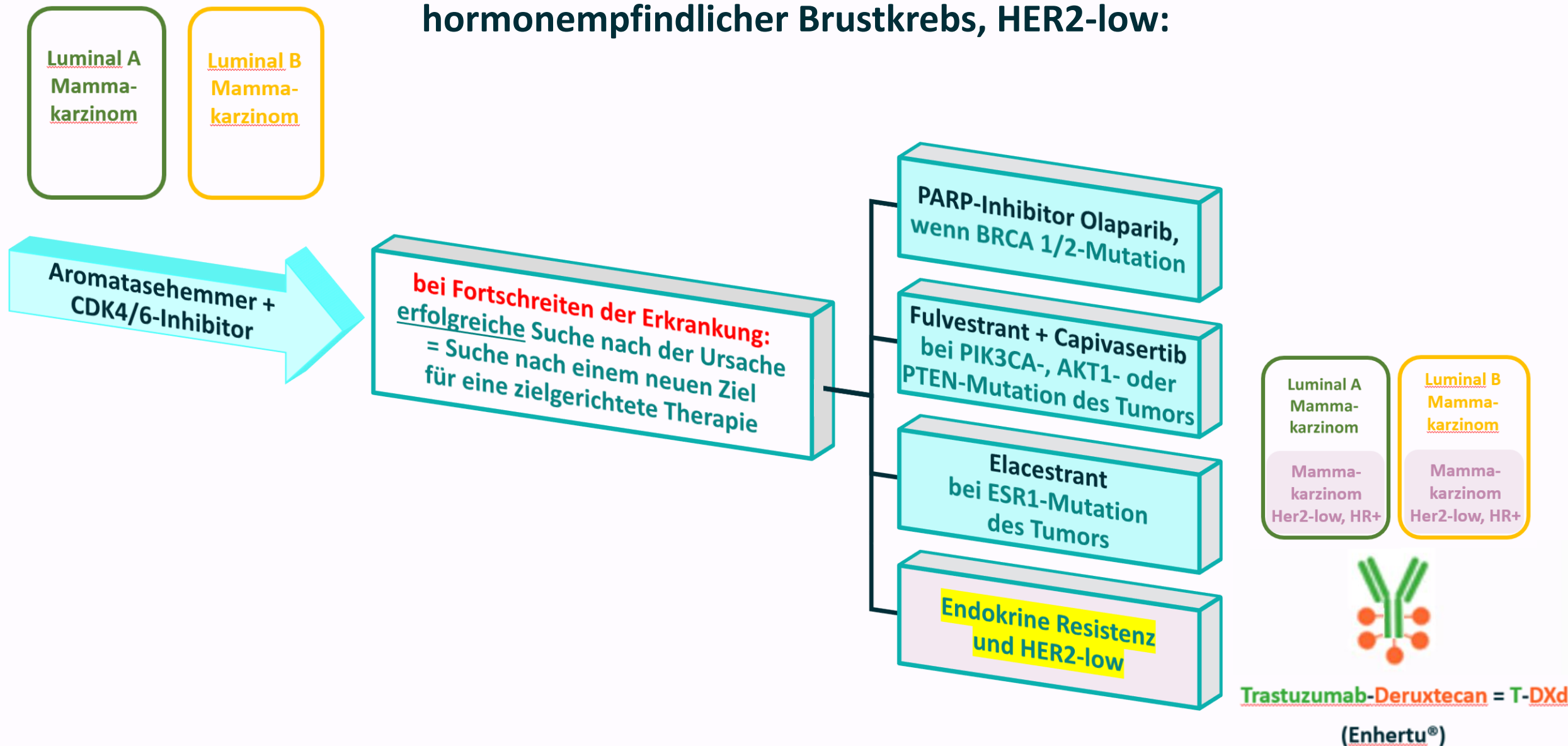




metastasierter hormonempfindlicher Brustkrebs, HER2-low:



metastasierter hormonempfindlicher Brustkrebs, HER2-low:



Beim Auftreten von Metastasen bestehen gute Therapiemöglichkeiten.

Beim Auftreten von Metastasen bestehen gute Therapiemöglichkeiten.

Bei einer Neuerkrankung richtet sich die (neo-)adjuvante Therapie gegen mögliche Mikrometastasen.

Ziel: Verhinderung der Metastasierung und Heilung der Erkrankung.



kreiskrankenhaus
emmendingen



BRUSTZENTRUM
SÜDBADEN

**Danke für Ihre
Aufmerksamkeit!**