Guidelines Breast
Version 2023.1D

Osteoonkologie und Knochengesundheit

Osteoonkologie und Knochengesundheit

Guidelines Breast
Version 2023.1D

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Meta-analyses and Reviews (metastatic breast cancer)

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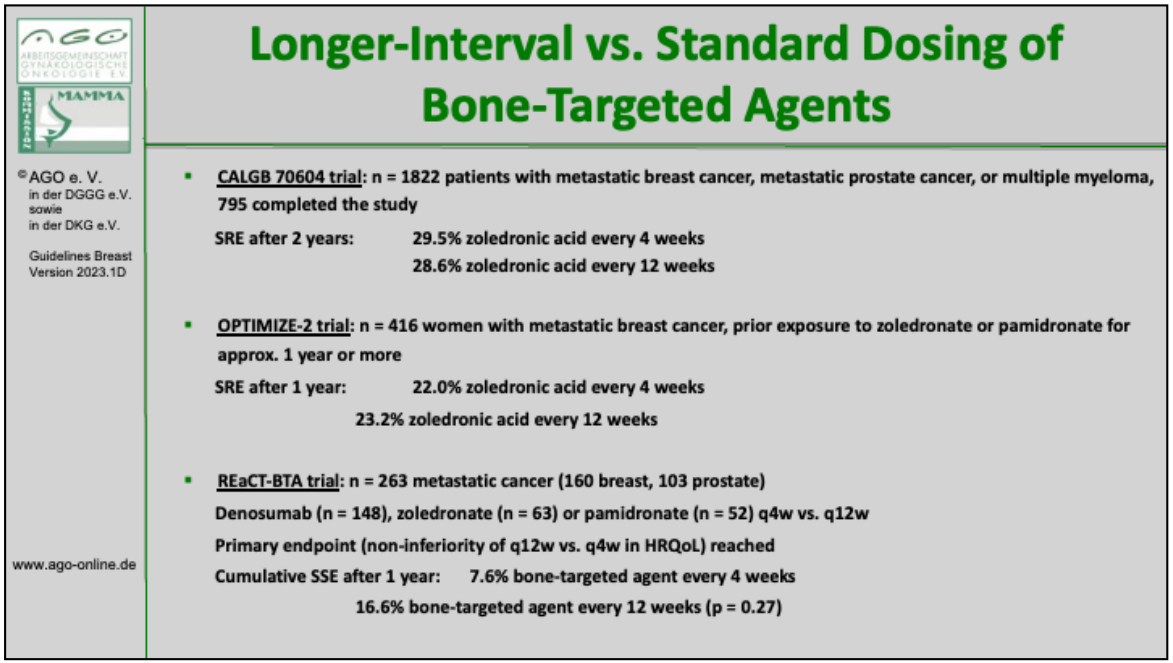

Randomized trials – Zoledronic acid:

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3. Lipton A, Steger GG, Figueroa J et al. Randomized Active-Controlled Phase II Study of Denosumab Efficacy and Safety in Patients With Breast Cancer-Related Bone Metastases. J Clin Onc 2007: 25 (28): 4431-4437

Non-randomized studies:

1. Addison CL, Bouganim N, Hilton J et al. A phase II, multicentre trial evaluating the efficacy of de-escalated bisphosphonate therapy in metastatic breast cancer patients at low-risk of skeletal-related events. Breast Cancer Res Treat 2014; 144: 615-624

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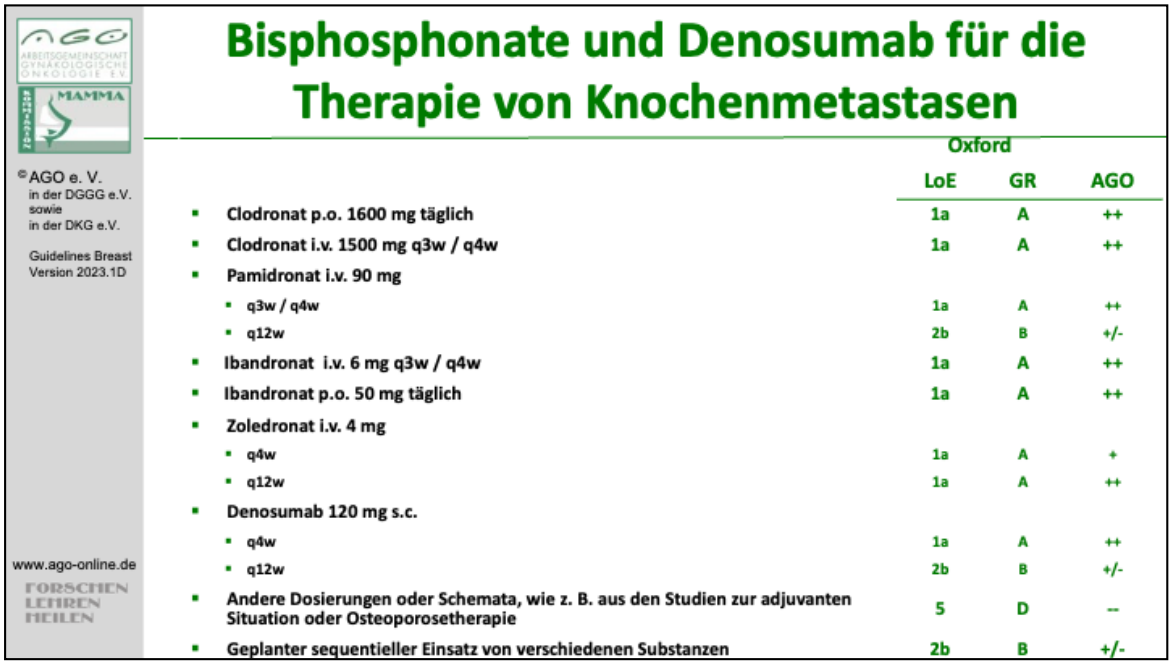

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Bisphosphonate und Denosumab für die Therapie von Knochenmetastasen

	Oxford LoE	Oxford GR	AGO
Clodronat p.o. 1600 mg täglich	1a	A	++
Clodronat i.v. 1500 mg q3w / q4w	1a	A	++
Pamidronat i.v. 90 mg			
q3w / q4w	1a	A	++
q12w	2b	B	+/-
Ibandronat i.v. 6 mg q3w / q4w	1a	A	++
Ibandronat p.o. 50 mg täglich	1a	A	++
Zoledronat i.v. 4 mg			
q4w	1a	A	+
q12w	1a	A	++
Denosumab 120 mg s.c.			
q4w	1a	A	++
q12w	2b	B	+/-
Andere Dosierungen oder Schemata, wie z. B. aus den Studien zur adjuvanten Situation oder Osteoporosetherapie	5	D	--
Geplanter sequentieller Einsatz von verschiedenen Substanzen	2b	B	+/-

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Pamidronate:
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Denosumab & bisphosphonates:
1. Clemons M, Ong M, Stober C et al. A randomised trial of 4- versus 12-weekly administration of bone-targeted agents in patients with bone metastases from breast or castration-resistant prostate cancer. Eur J Cancer 2021; 142: 132-140
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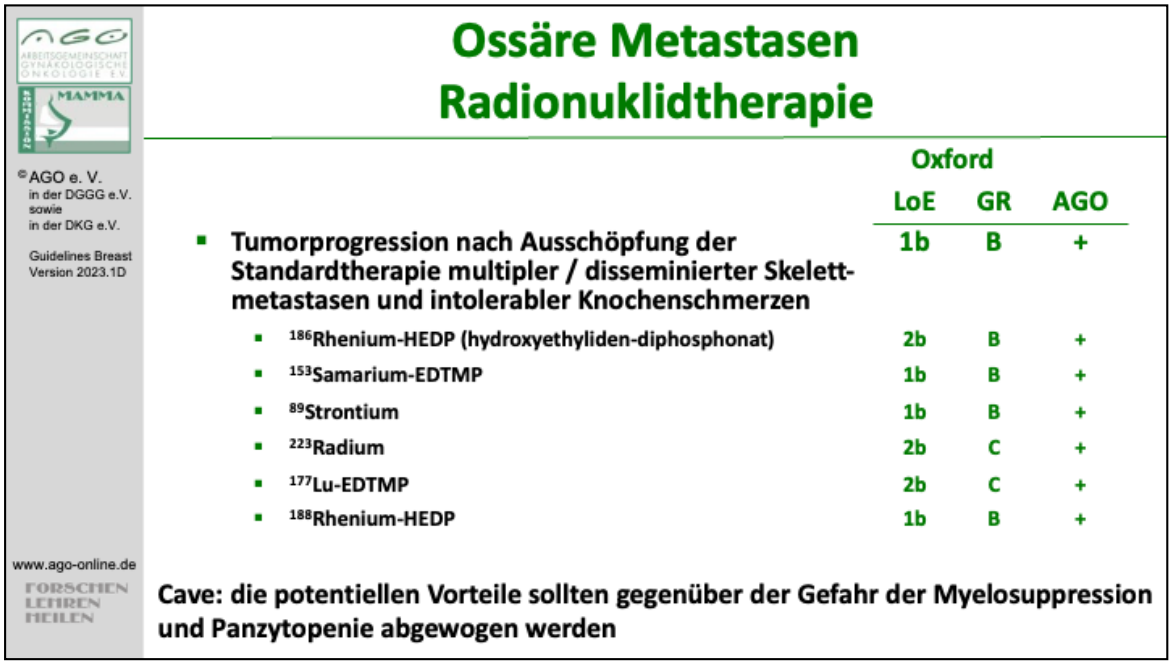

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^{186}Rhenium (^{186}Re-HEDP)

1. de Klerk JM, van het Schip AD, Zonnenberg BA et al. Phase 1 study of rhenium-186-HEDP in patients with bone metastases originating from breast cancer. J Nucl Med 137:244-49, 1996
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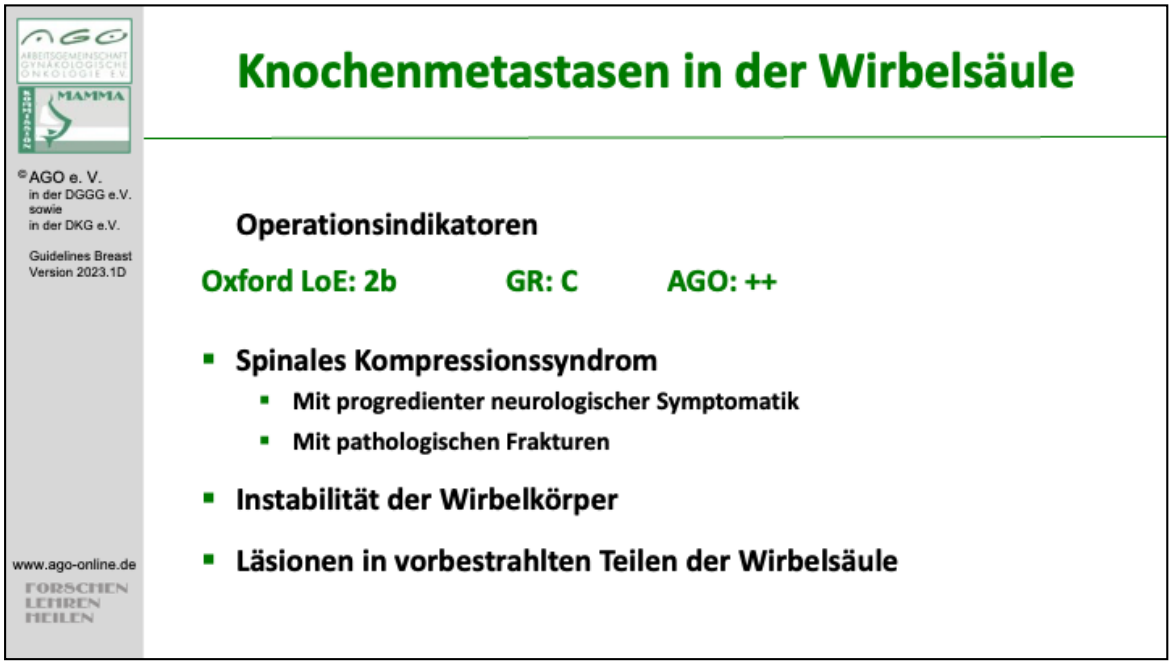

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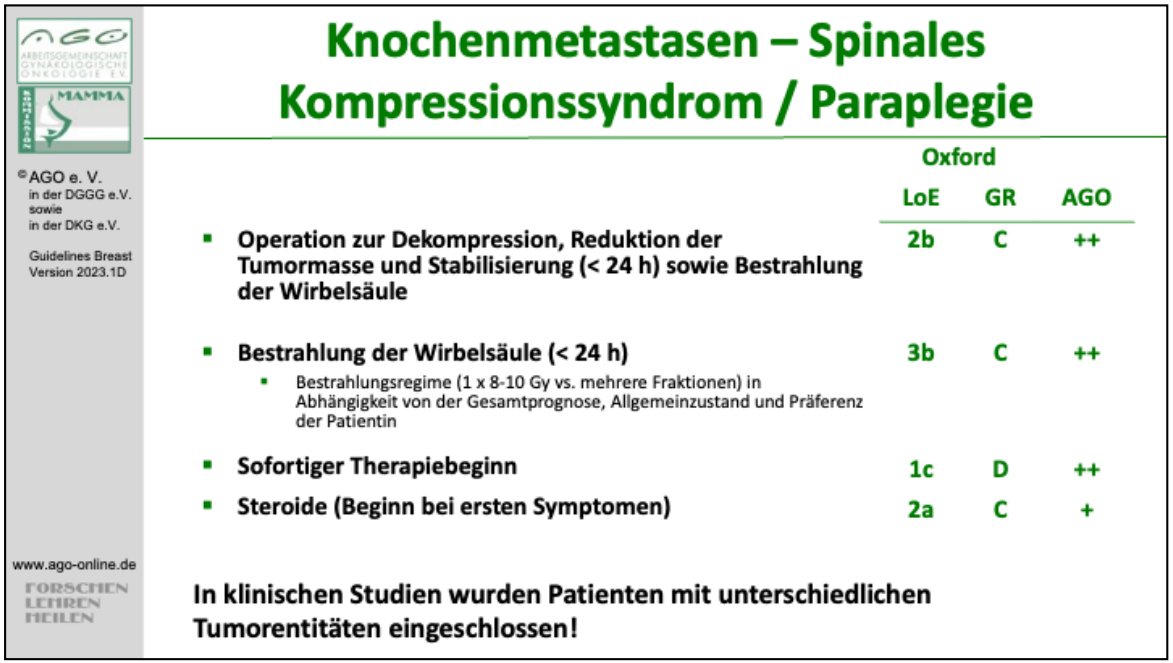

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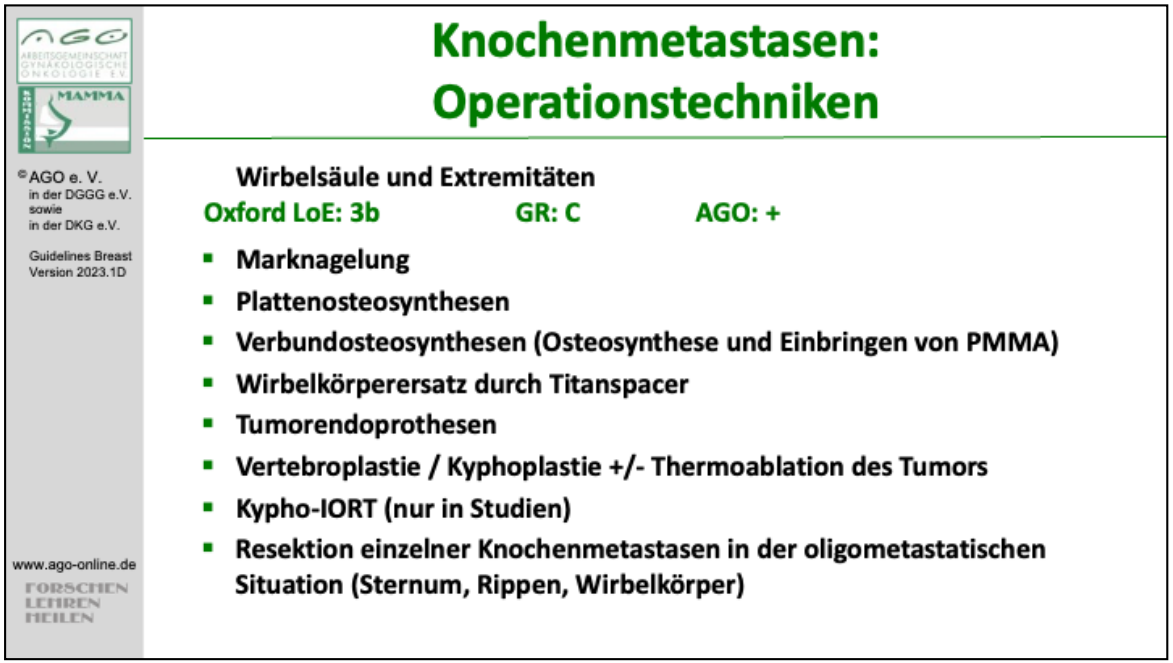

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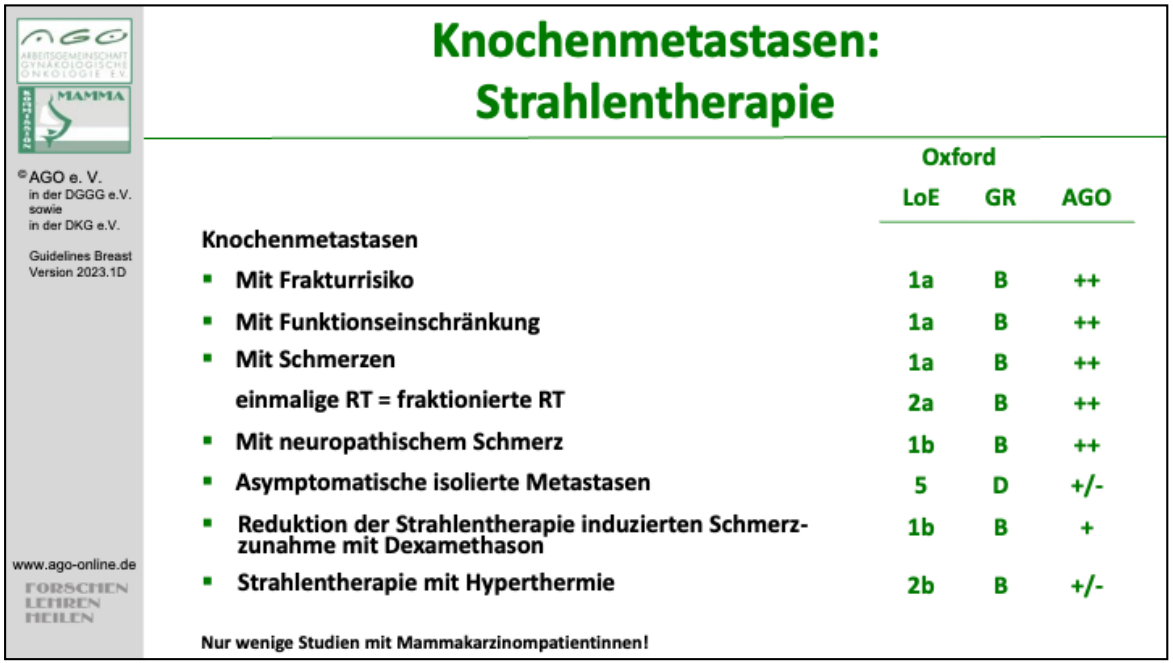

Knochenmetastasen: Strahlentherapie

	Oxford		
	LoE	GR	AGO
Knochenmetastasen			
▪ Mit Frakturrisiko	1a	B	++
▪ Mit Funktionseinschränkung	1a	B	++
▪ Mit Schmerzen	1a	B	++
einmalige RT = fraktionierte RT	2a	B	++
▪ Mit neuropathischem Schmerz	1b	B	++
▪ Asymptomatische isolierte Metastasen	5	D	+/-
▪ Reduktion der Strahlentherapie induzierten Schmerz-zunahme mit Dexamethason	1b	B	+
▪ Strahlentherapie mit Hyperthermie	2b	B	+/-

Nur wenige Studien mit Mammakarzinompatientinnen!

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for bone metastases: a double-blind, randomised placebo-controlled, phase 3 trial. Lancet Oncol 16(15):1463-72, 2015
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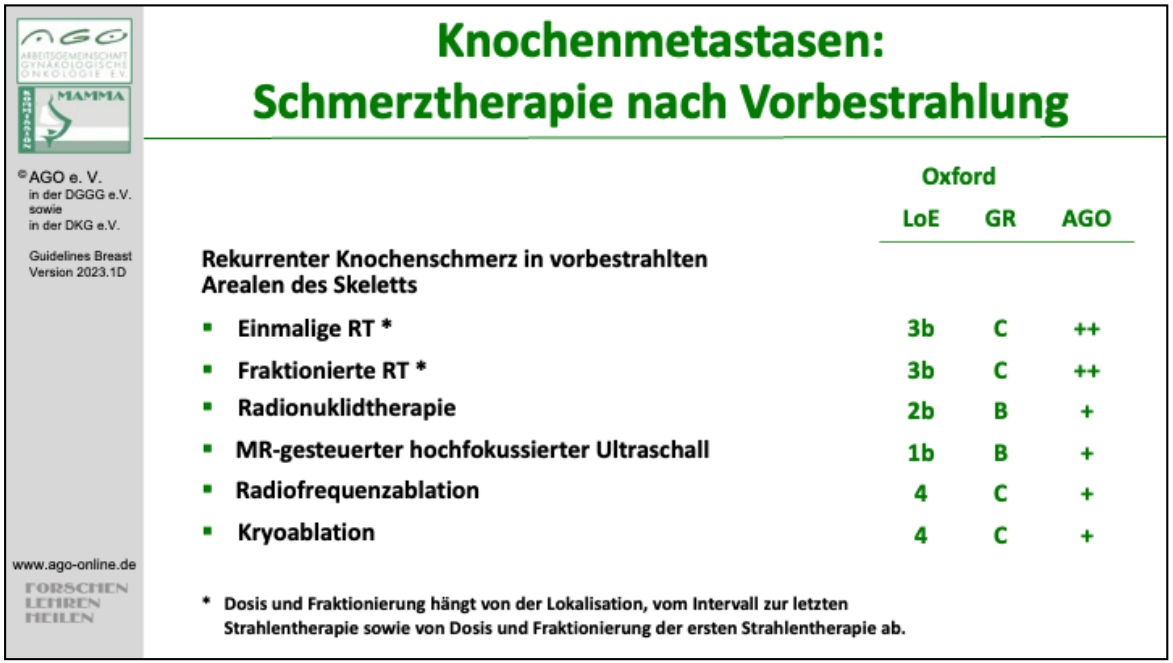

Recurrent bone pain in pre-irradiated parts of the skeleton

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Magnetic resonance-guided focused ultrasound

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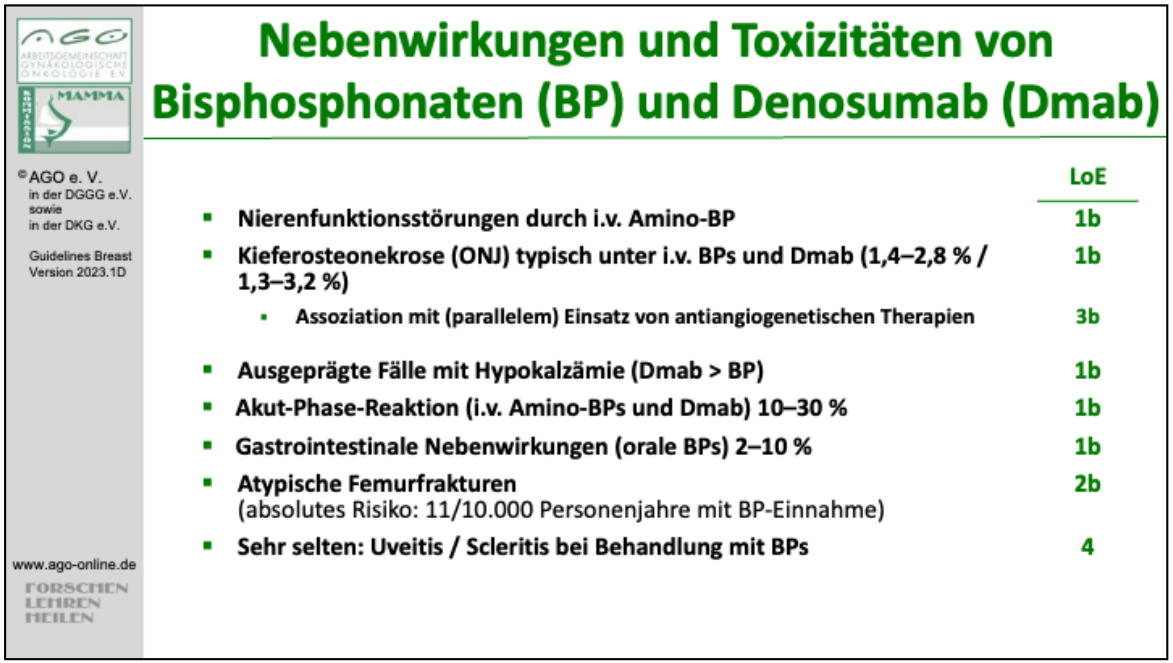

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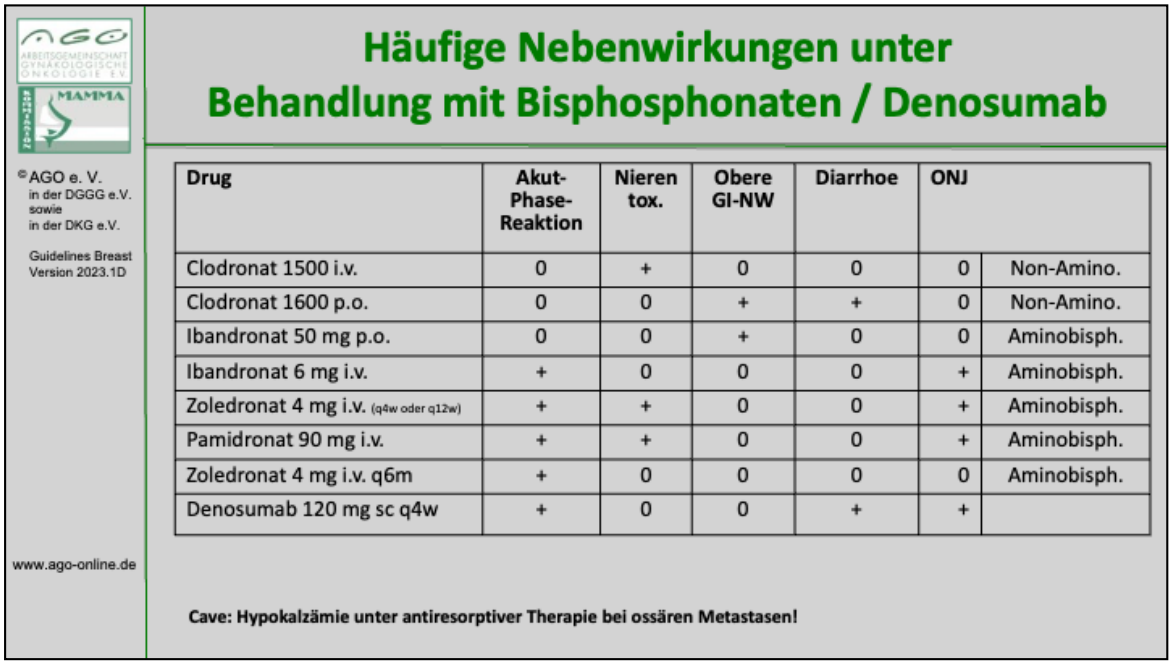

Häufige Nebenwirkungen unter Behandlung mit Bisphosphonaten / Denosumab

Guidelines Breast
Version 2023.1D

www.ago-online.de

Drug	Akut-Phase-Reaktion	Nieren tox.	Obere GI-NW	Diarrhoe	ONJ	
Clodronat 1500 i.v.	0	+	0	0	0	Non-Amino.
Clodronat 1600 p.o.	0	0	+	+	0	Non-Amino.
Ibandronat 50 mg p.o.	0	0	+	0	0	Aminobisph.
Ibandronat 6 mg i.v.	+	0	0	0	+	Aminobisph.
Zoledronat 4 mg i.v. (q4w oder q12w)	+	+	0	0	+	Aminobisph.
Pamidronat 90 mg i.v.	+	+	0	0	+	Aminobisph.
Zoledronat 4 mg i.v. q6m	+	0	0	0	0	Aminobisph.
Denosumab 120 mg sc q4w	+	0	0	+	+	

Cave: Hypokalzämie unter antiresorptiver Therapie bei ossären Metastasen!

Bisphosphonates

1. Schilcher, J., V. Koeppen, P. Aspenberg et al. Risk of atypical femoral fracture during and after bisphosphonate use. Acta Orthop 100-107, 2015
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Denosumab

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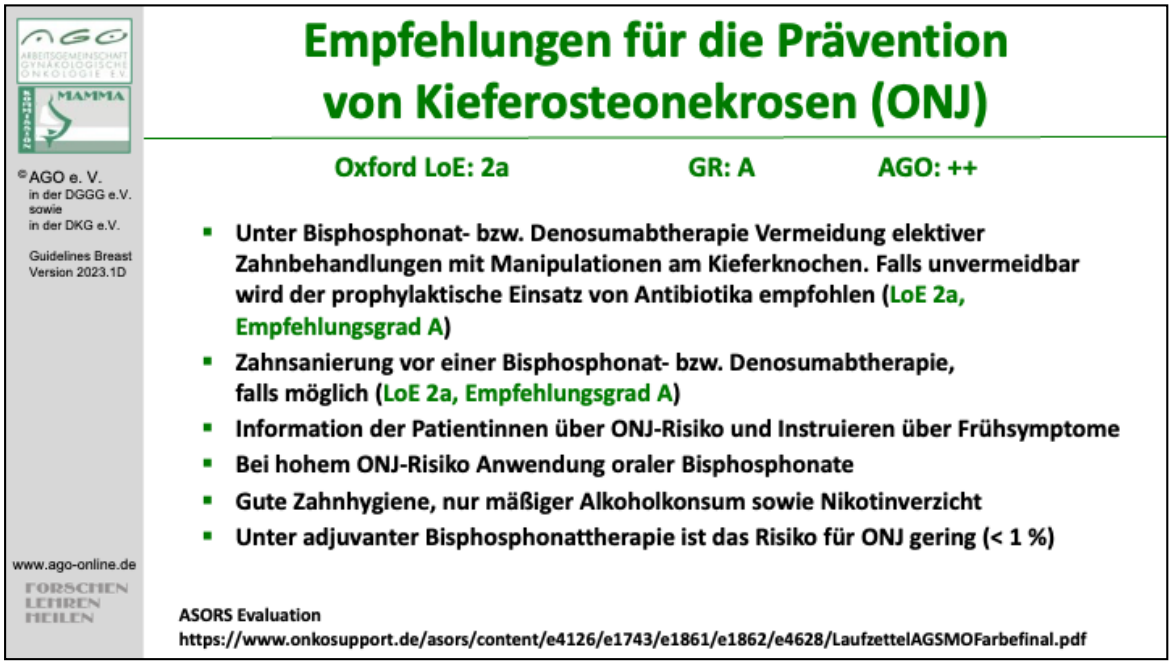

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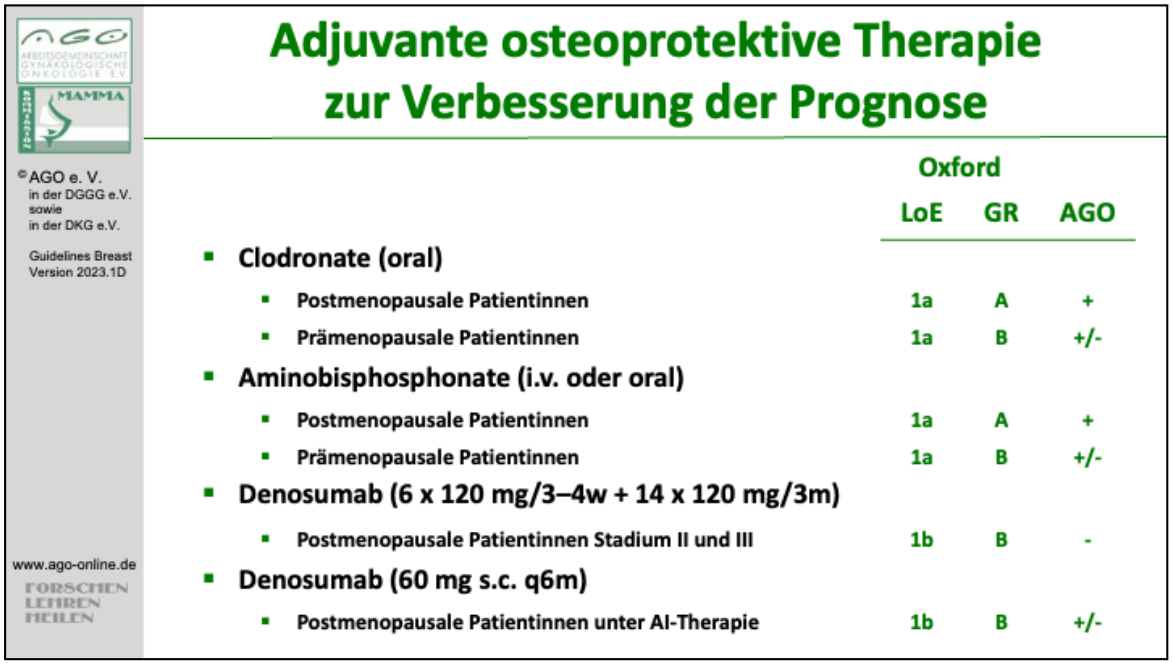

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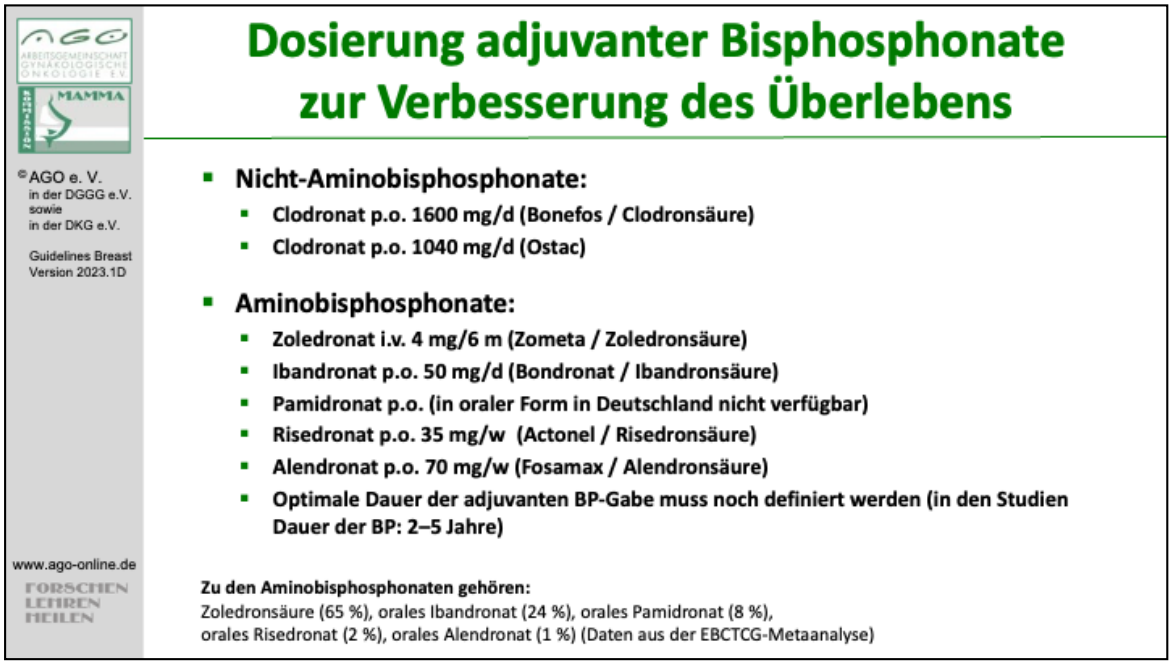

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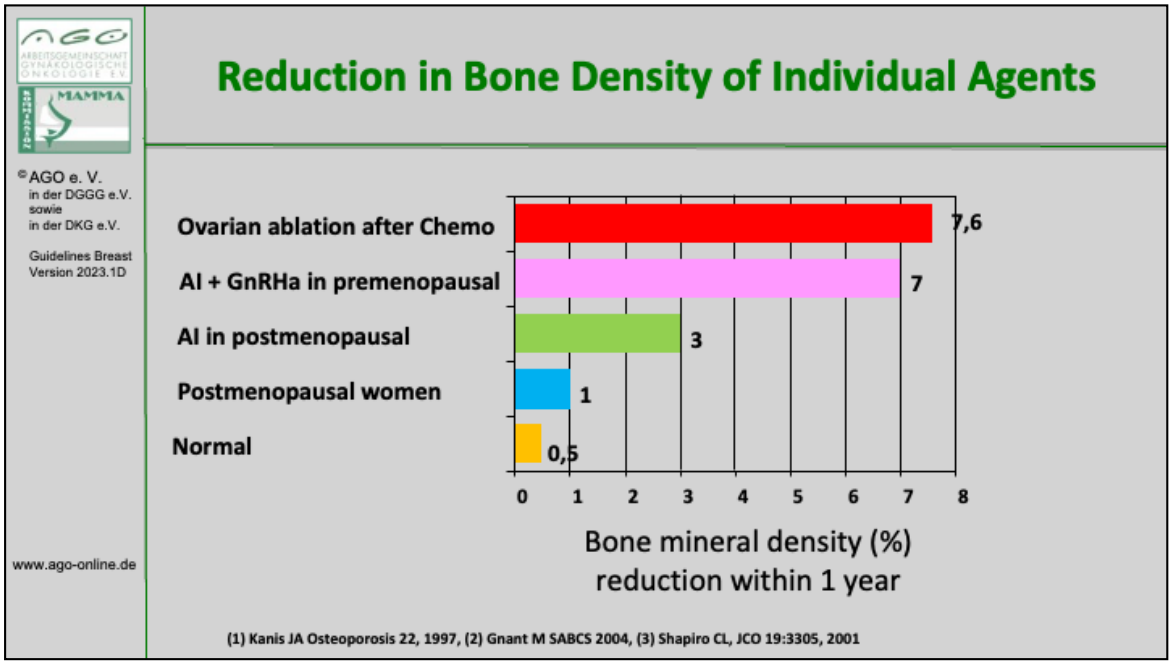

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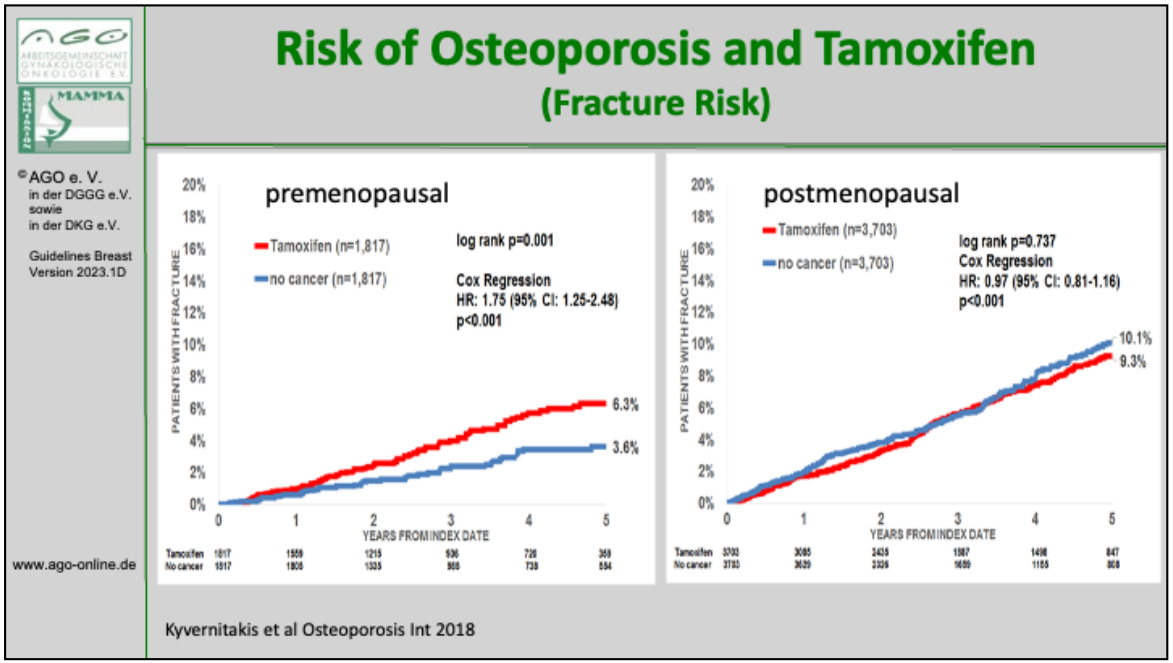

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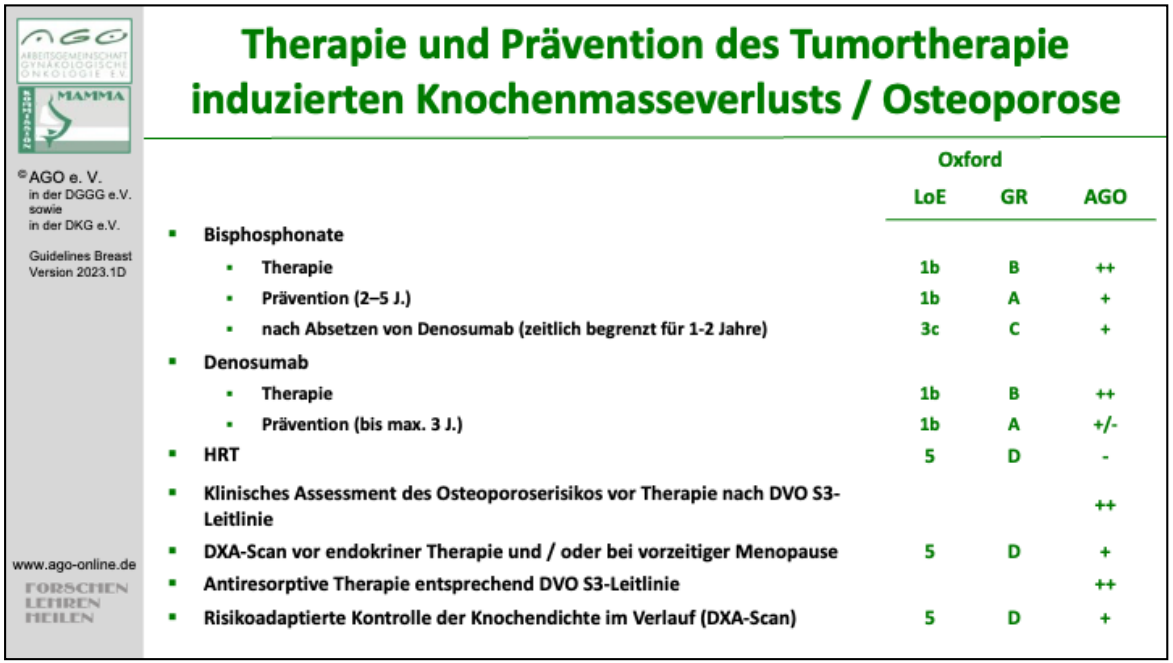

Therapie und Prävention des Tumortherapie induzierten Knochenmasseverlusts / Osteoporose

	Oxford		
	LoE	GR	AGO
▪ **Bisphosphonate**			
▪ **Therapie**	1b	B	++
▪ **Prävention (2–5 J.)**	1b	A	+
▪ **nach Absetzen von Denosumab (zeitlich begrenzt für 1-2 Jahre)**	3c	C	+
▪ **Denosumab**			
▪ **Therapie**	1b	B	++
▪ **Prävention (bis max. 3 J.)**	1b	A	+/-
▪ **HRT**	5	D	-
▪ **Klinisches Assessment des Osteoporoserisikos vor Therapie nach DVO S3-Leitlinie**			++
▪ **DXA-Scan vor endokriner Therapie und / oder bei vorzeitiger Menopause**	5	D	+
▪ **Antiresorptive Therapie entsprechend DVO S3-Leitlinie**			++
▪ **Risikoadaptierte Kontrolle der Knochendichte im Verlauf (DXA-Scan)**	5	D	+

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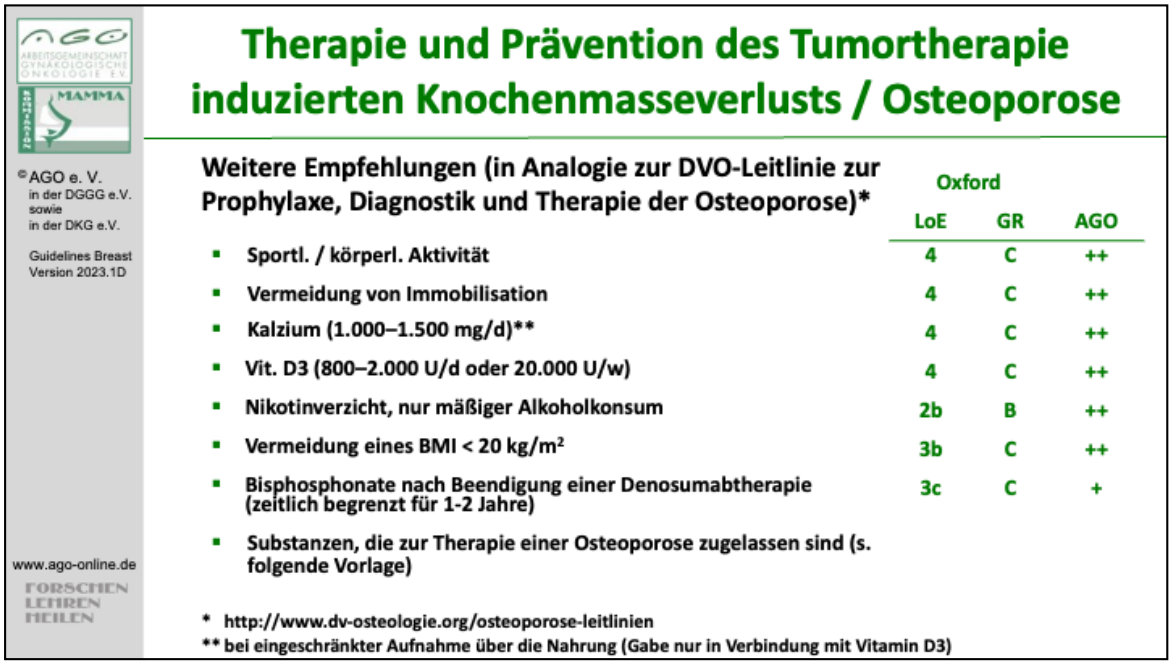

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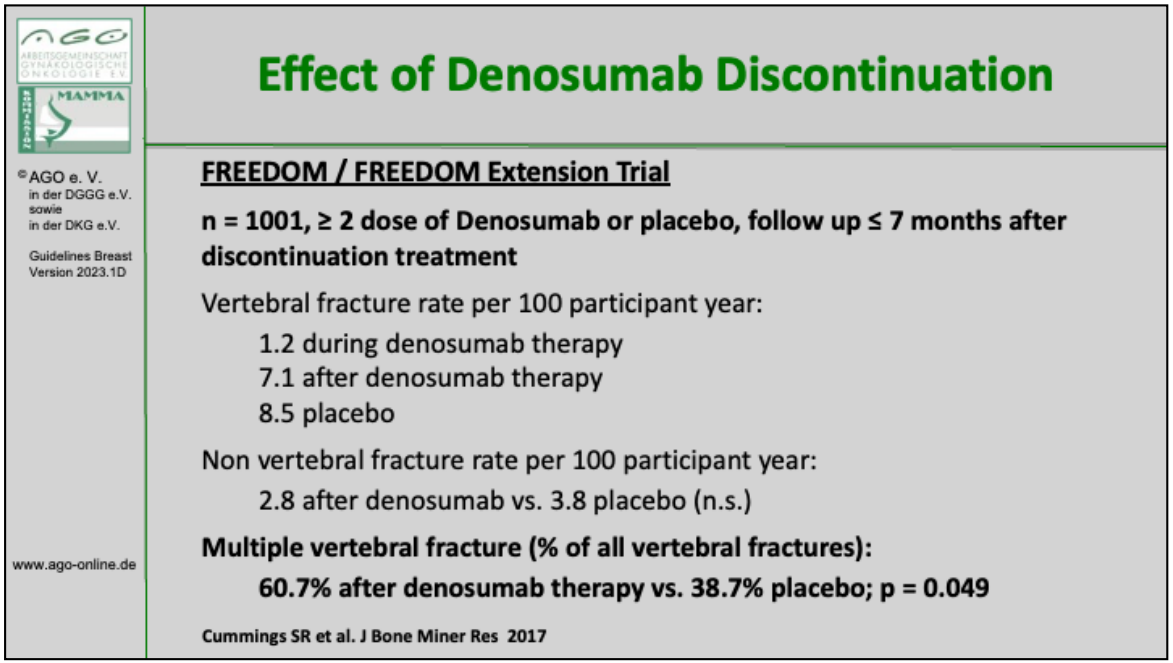

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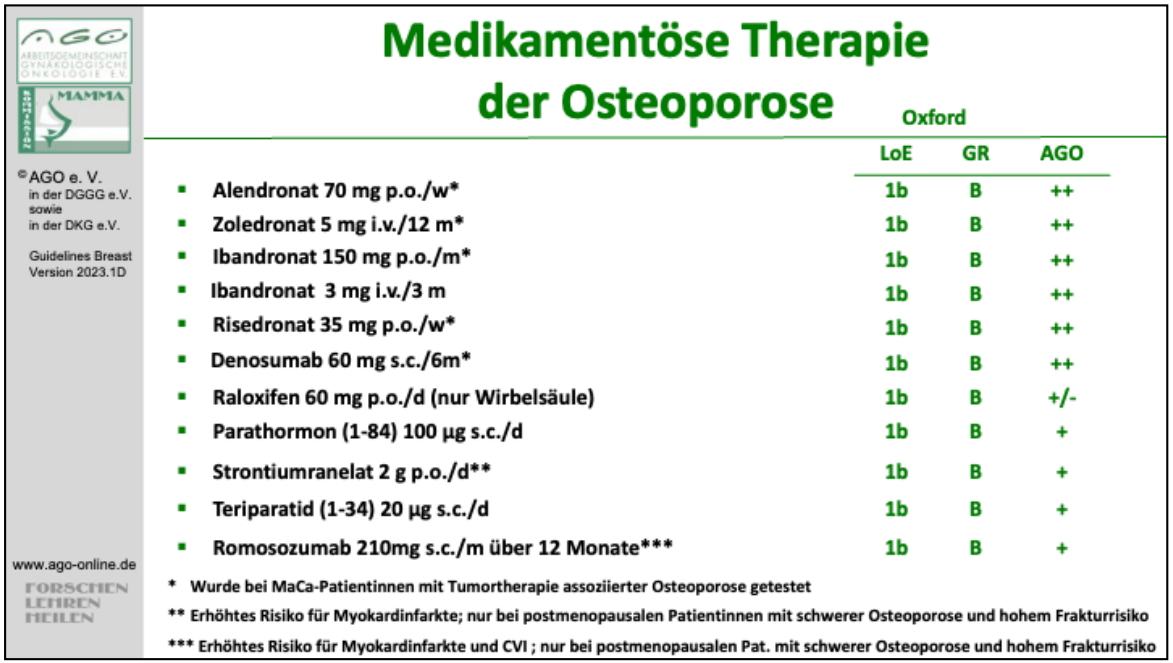

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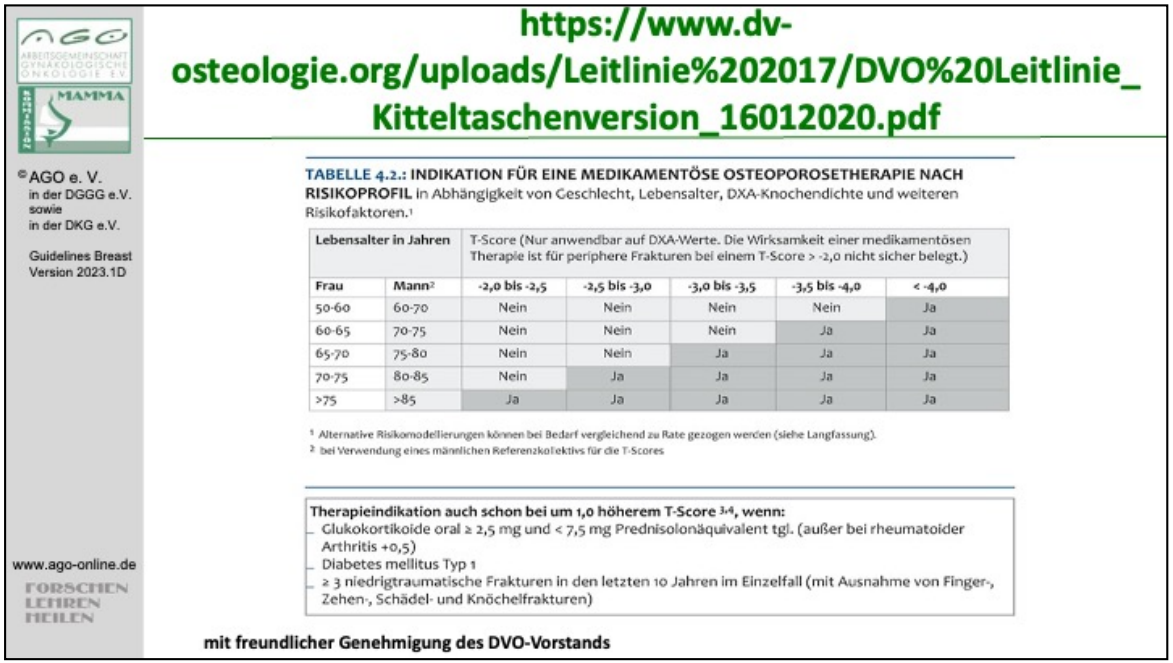

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TABELLE 4.2.: INDIKATION FÜR EINE MEDIKAMENTÖSE OSTEOPOROSETHERAPIE NACH RISIKOPROFIL in Abhängigkeit von Geschlecht, Lebensalter, DXA-Knochendichte und weiteren Risikofaktoren.[1]

Lebensalter in Jahren		T-Score (Nur anwendbar auf DXA-Werte. Die Wirksamkeit einer medikamentösen Therapie ist für periphere Frakturen bei einem T-Score > -2,0 nicht sicher belegt.)				
Frau	Mann[2]	-2,0 bis -2,5	-2,5 bis -3,0	-3,0 bis -3,5	-3,5 bis -4,0	< -4,0
50-60	60-70	Nein	Nein	Nein	Nein	Ja
60-65	70-75	Nein	Nein	Nein	Ja	Ja
65-70	75-80	Nein	Nein	Ja	Ja	Ja
70-75	80-85	Nein	Ja	Ja	Ja	Ja
>75	>85	Ja	Ja	Ja	Ja	Ja

[1] Alternative Risikomodellierungen können bei Bedarf vergleichend zu Rate gezogen werden (siehe Langfassung).
[2] bei Verwendung eines männlichen Referenzkollektivs für die T-Scores

Therapieindikation auch schon bei um 1,0 höherem T-Score [3,4], wenn:
- Glukokortikoide oral ≥ 2,5 mg und < 7,5 mg Prednisolonäquivalent tgl. (außer bei rheumatoider Arthritis +0,5)
- Diabetes mellitus Typ 1
- ≥ 3 niedrigtraumatische Frakturen in den letzten 10 Jahren im Einzelfall (mit Ausnahme von Finger-, Zehen-, Schädel- und Knöchelfrakturen)

mit freundlicher Genehmigung des DVO-Vorstands

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