



Herz oder nicht Herz: Die Organzuteilung in der Schweiz

**PD Dr. Franz F. Immer, Facharzt Herzchirurgie FMH
Direktor Swisstransplant, Bern**

9. Kardiologie-Symposium, 5. November 2015

Inhalt der Präsentation

- Einstieg
- Aktuelle Situation in der Schweiz: Warteliste und Organmangel
- Organspende und Transplantation mit Fokus Herz
 - Organspender
 - Ablauf einer Organspende
 - Organempfänger
- Schlusswort



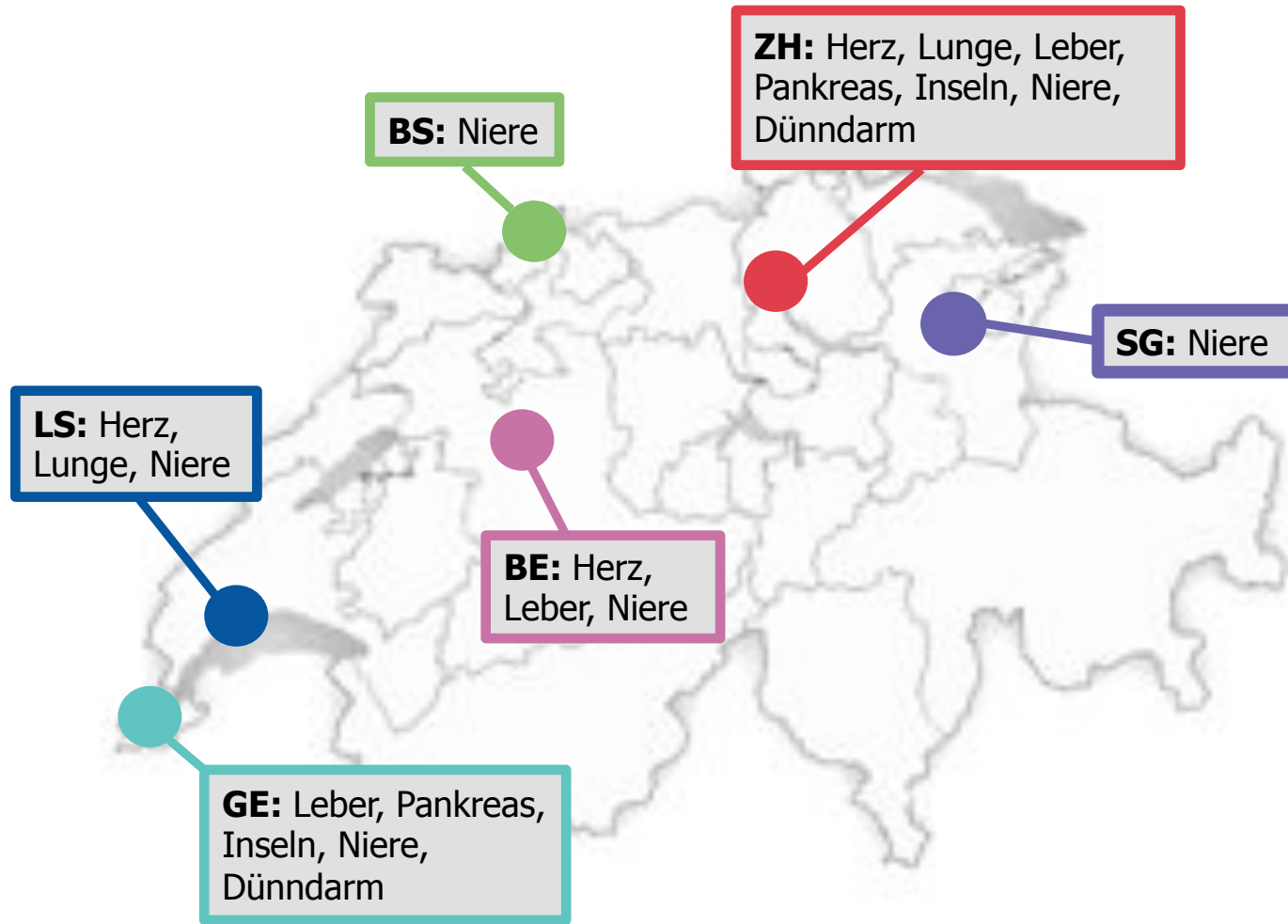
Herz oder...

Drei Herzen in 36 Stunden für Aline



... nicht Herz?

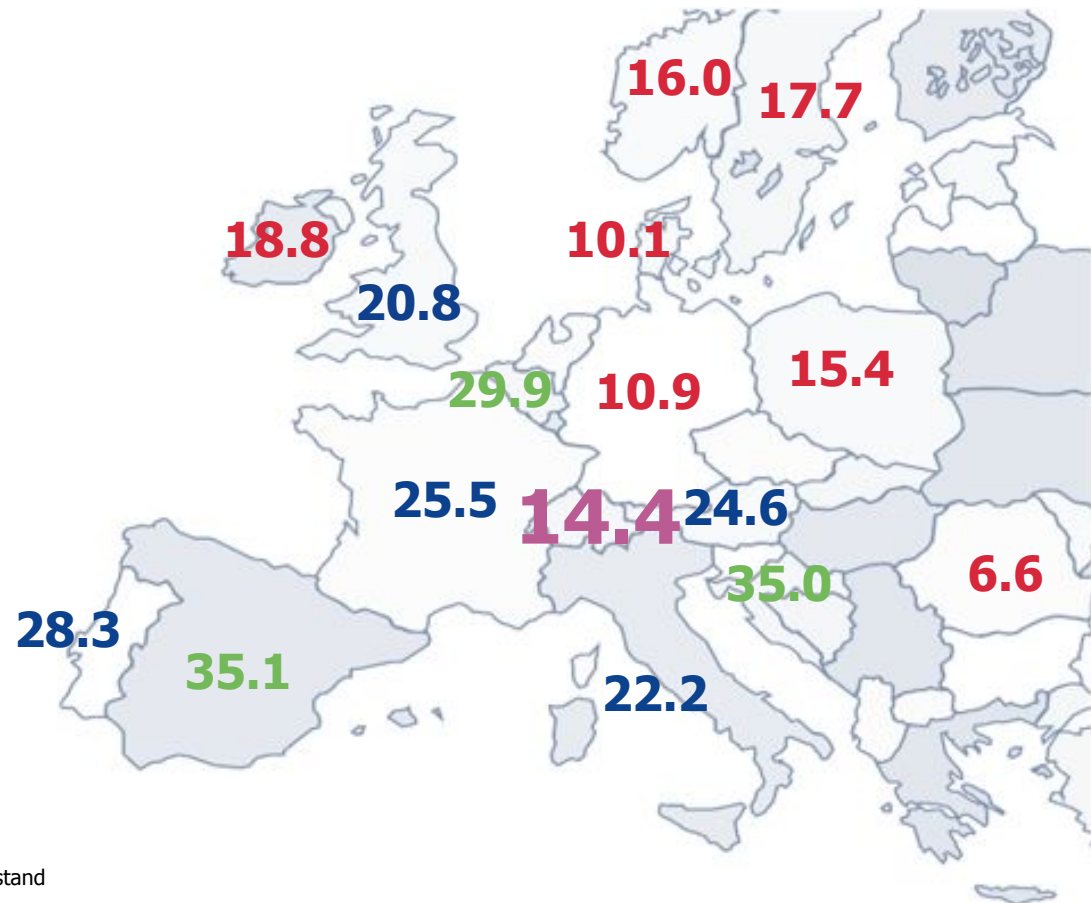
Transplantationszentren der Schweiz



Spenderaufkommen Europa

Zahlen pro Million Einwohner

Schweiz
14.4 Spender/Mio.
Einwohner (2014)*



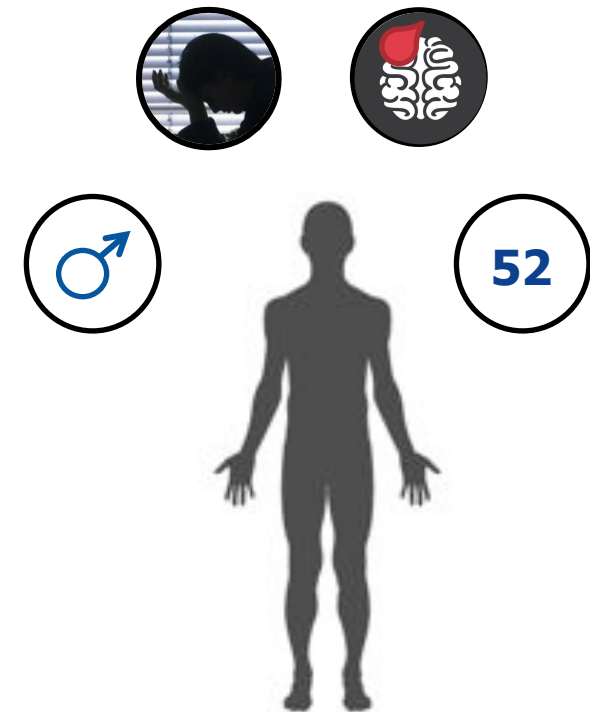
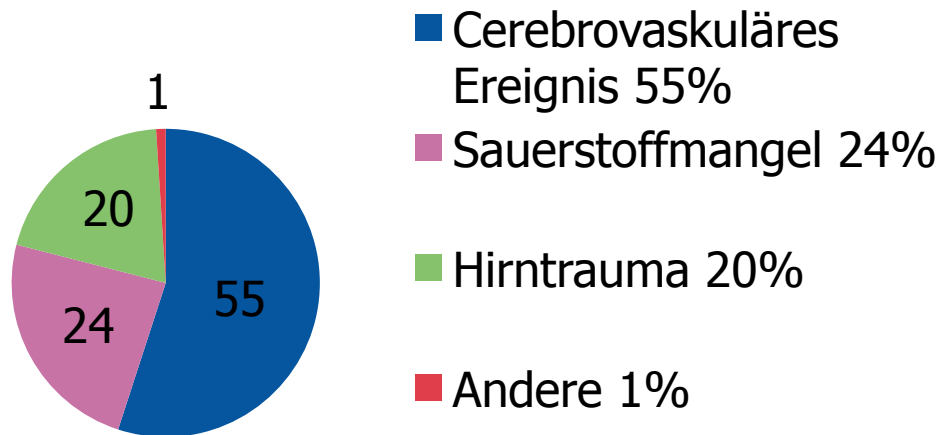
* inkl. Spender im Hirntod nach Herz-Kreislaufstillstand

Organmangel in der Schweiz



Wer wird Organspender?

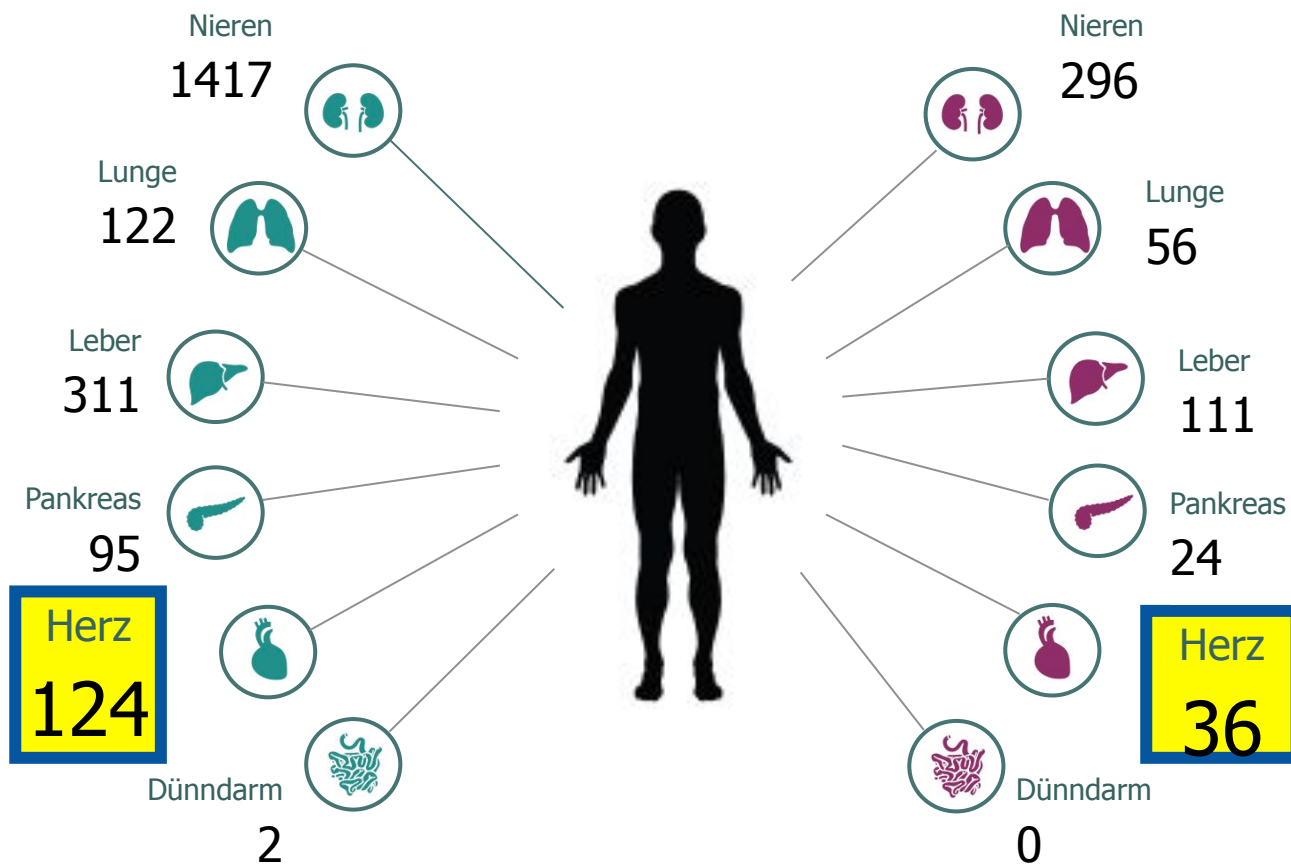
Häufigkeit der Todesursachen bei Organspendern



Warteliste

2014

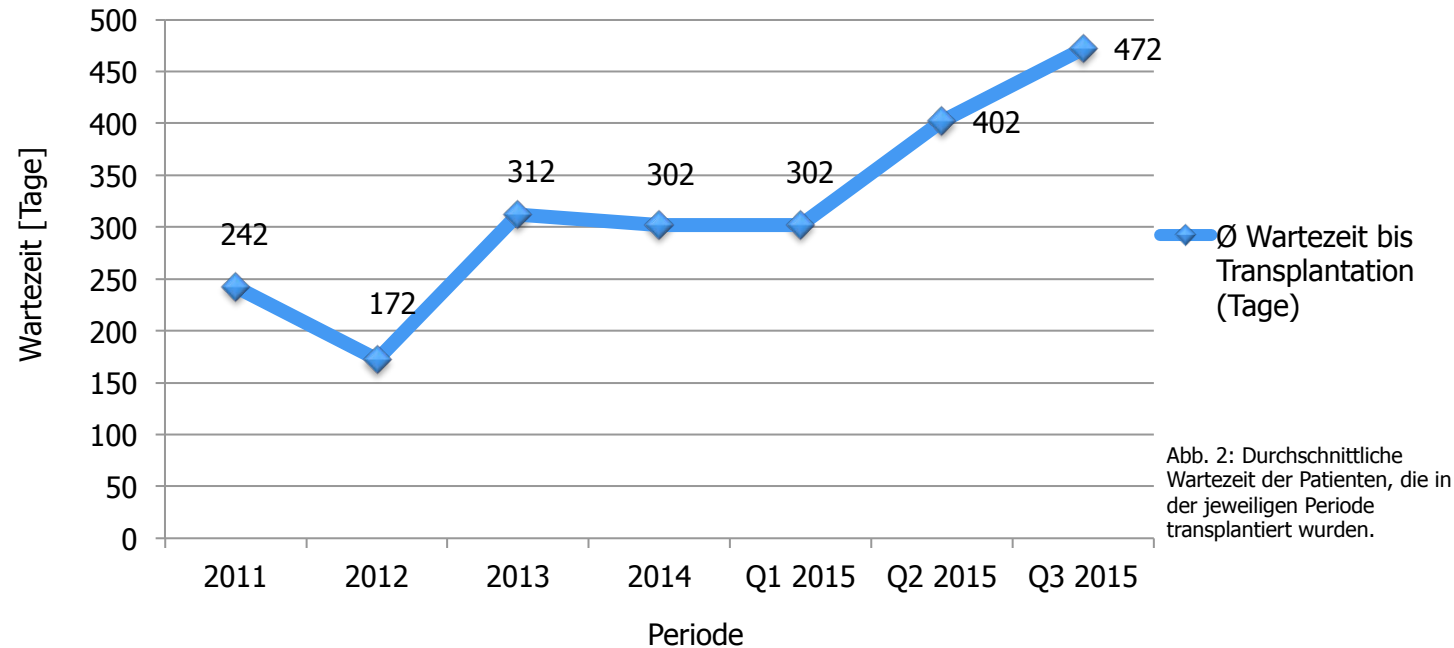
Transplantationen



Verstorbene Patienten auf Warteliste



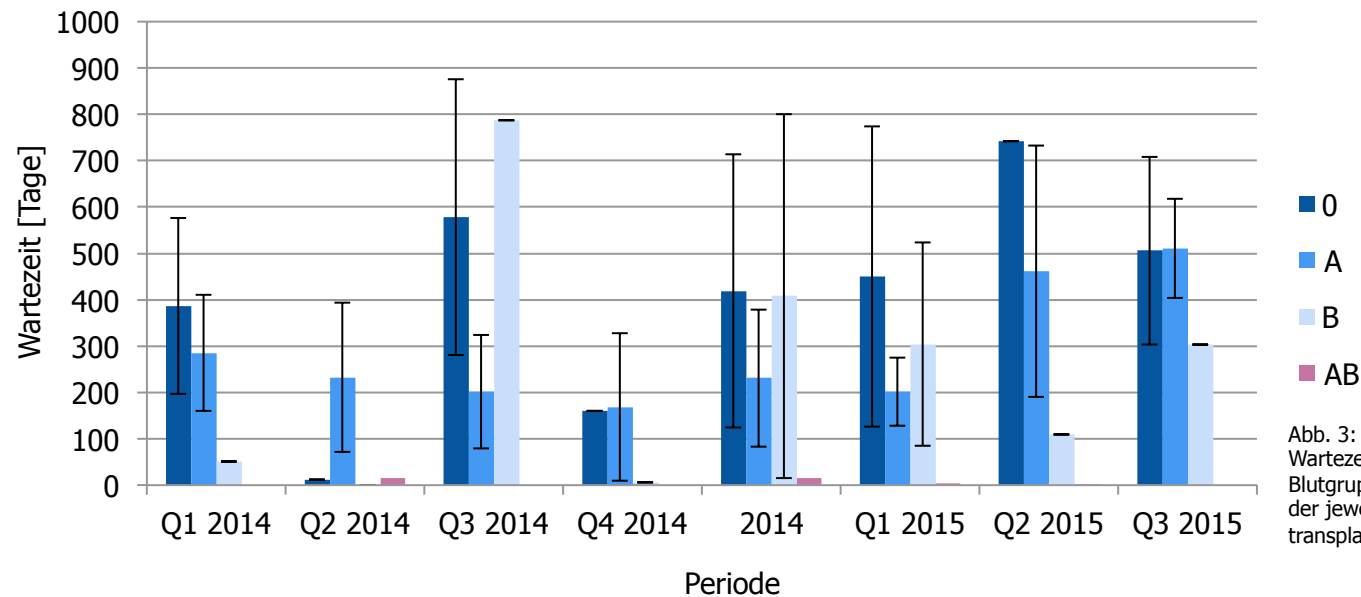
Warteliste Herz



	2011	2012	2013	2014	Q1 15	Q2 15	Q3 15
Anzahl Patienten auf Warteliste*	36	57	59	69	70	72	74
Anzahl transplantierte Patienten	36	35	33	36	11	9	11
Ø Wartezeit bis Transplantation (Tage)	242	172	312	302	302	402	472

* Stand am letzten Tag der jeweiligen Periode

Wartezeit Herz nach Blutgruppe

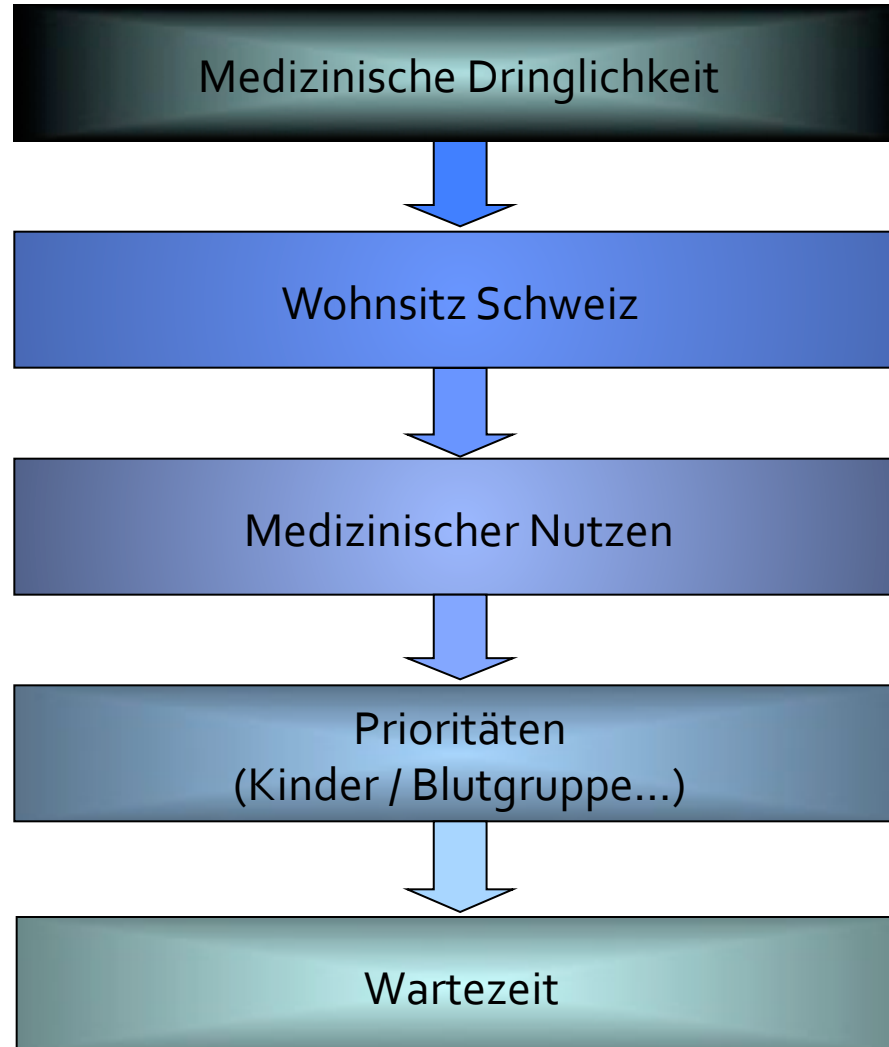


Herz		Q1 2014	Q2 2014	Q3 2014	Q4 2014	2014	Q1 15	Q2 15	Q3 15
alle BG	n	10	10	12	4	36	11	9	11
	mean $\pm$ 1. SD	302 $\pm$ 178	188 $\pm$ 169	456 $\pm$ 313	125 $\pm$ 132	302 $\pm$ 258	302 $\pm$ 267	402 $\pm$ 303	472 $\pm$ 155
0	n	4	1	5	1	11	4	1	3
	mean $\pm$ 1. SD	387 $\pm$ 190	12	578 $\pm$ 298	160	419 $\pm$ 295	450 $\pm$ 324	742	506 $\pm$ 203
A	n	5	8	5	2	20	3	6	6
	mean $\pm$ 1. SD	285 $\pm$ 125	232 $\pm$ 161	202 $\pm$ 123	168	231 $\pm$ 148	202 $\pm$ 74	461 $\pm$ 271	511 $\pm$ 107
B	n	1	-	2	1	4	3	1	2
	mean $\pm$ 1. SD	51 $\pm$ 0	-	787	6	408 $\pm$ 393	304 $\pm$ 219	109	303
AB	n	-	1	-	-	1	1	1	-
	mean $\pm$ 1. SD	-	15	-	-	15	4	2	-

Der Ablauf einer Organspende



Zuteilungsregeln allgemein



Herzallokation in der Schweiz

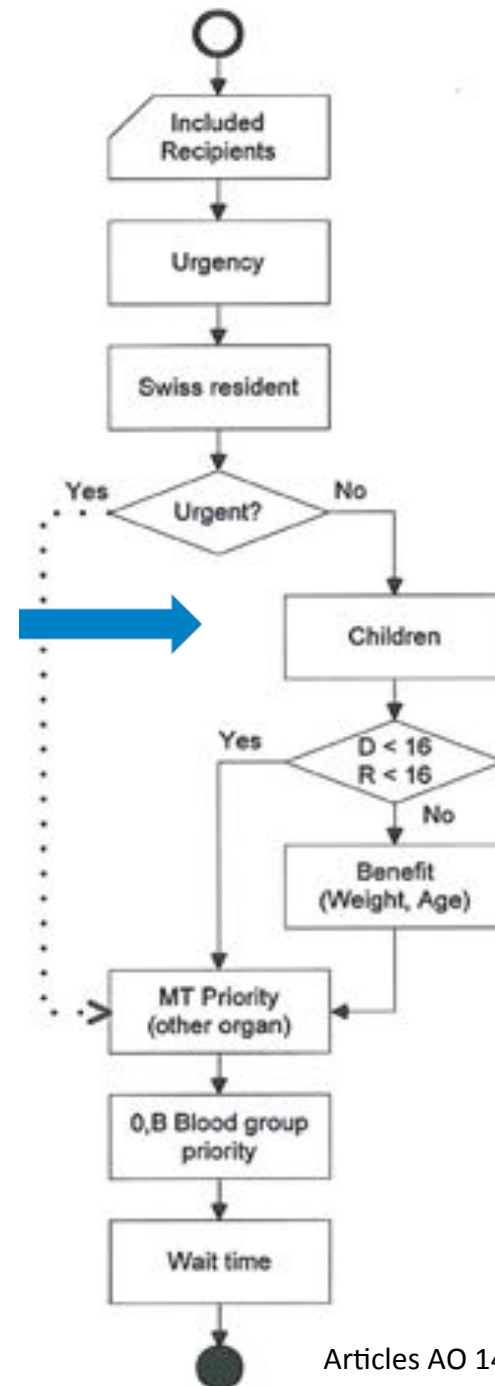
Dringlichkeit



Medizinischer Nutzen

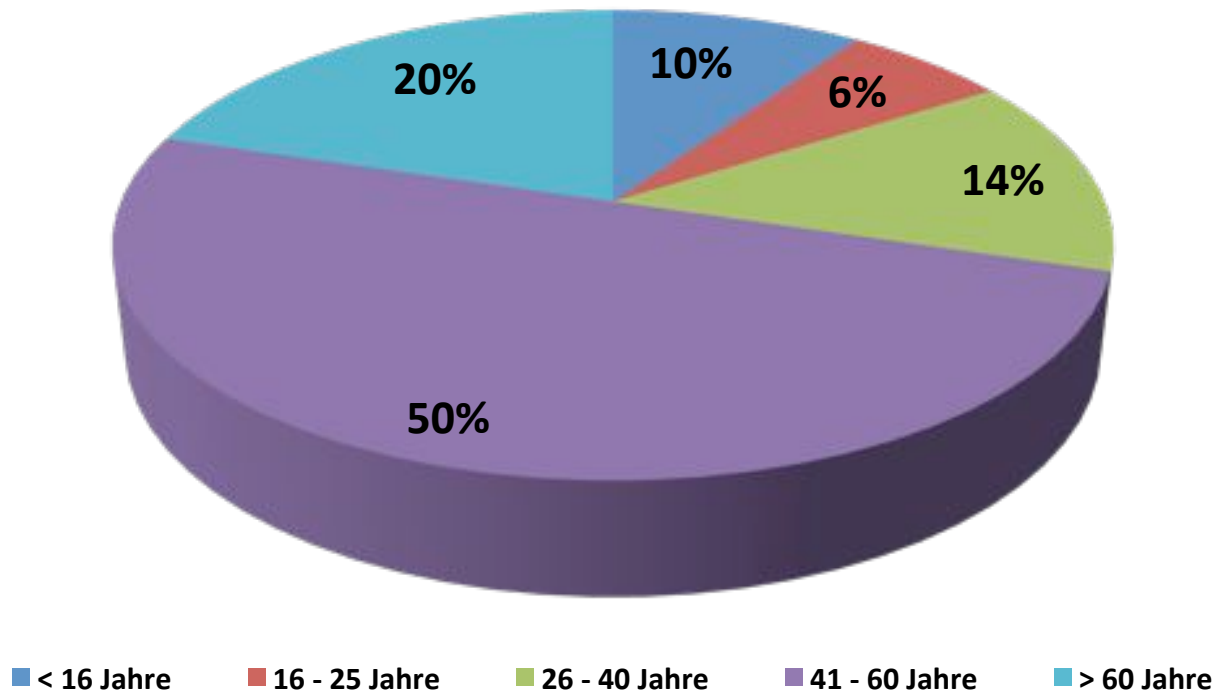


Zeit auf Warteliste



Herzwarteliste (1.7.2007 – 30.6.2013)

Herzwarteliste (n=300)



Weiss J, Beyeler F, Immer FF; SMW 2014

	Deceased donors	Heart donor	Non-donor
Total donors	695	239 (34%)	456 (66%)
Males	394 (57%)	156 (65%)	238 (52%)
Females	301 (43%)	83 (35%)	218 (48%)
Age (y)	51.5 ± 18.6	40.7 ± 15.9	57.2 ± 17.4
Body weight (kg)	73.8 ± 16.5	72.9 ± 17.2	74.3 ± 16.2
Body Mass Index (kg/m²)	25.5 ± 4.0	24.9 ± 3.5	25.8 ± 4.3
Reanimation	169 (24%)	49 (21%)	120 (26%)

Statistical analysis

Odds ratios for non-transplantation of heart (n=129; 2007–2009)

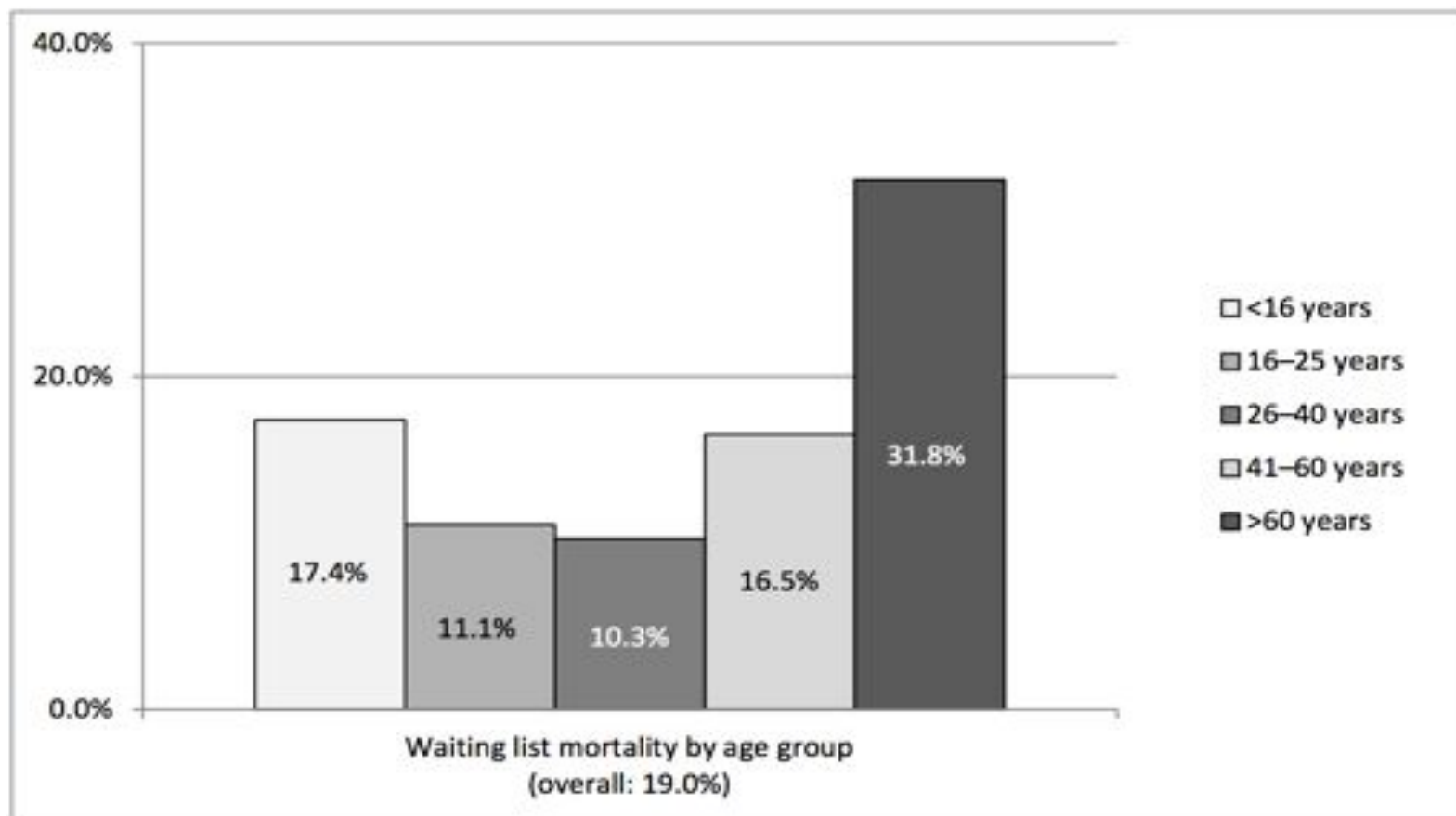
Patient characteristics		Infections	
Age (per 10 years)	2.23	Lung	0.65
Cause of admission		Clinical data	
Cardiac arrest	1.09	Hypertension	0.76
Medical history		Arrhythmia	0.71
Heart diseases	3.03	Diabetes insipidus	0.69
Cancer	2.56	Therapy	
Cause of death		Vasoactive support	1.26
Cerebrovascular accident	0.81	Volume therapy	0.54
Suicide	0.76	Abnormalities in laboratory results & vital parameters	
Cerebral tumour	1.79	Blood glucose	1.44
Method of 2nd brain death diagnosis		Cardiac frequency	1.73
Clinical	0.89	pH value	1.24
		Base excess	1.6

Only parameters with an OR $\neq$ 1 are shown; an OR $\leq$ 0.8 was considered as indicator of a clinically significant **positive effect** on transplantability, an OR $\geq$ 1.25 as indicator of a **negative effect**.

Organs originating from foreign OPOs allocated to patients in Switzerland							Organs offered by foreign OPOs	
	2009	2010	2011	2012	2013	Total	Total (2009–2013)	Acceptance rate
Heart	3(20.0%)	0(0.0%)	4(26.7%)	3(20.0%)	5(33.3%)	15	298	5.0%
Lung	1(6.7%)	1(6.7%)	3(20.0%)	8(53.3%)	2(13.3%)	15	309	4.9%
Liver	13(18.6%)	11(15.7%)	11(15.7%)	18(25.7%)	17(24.3%)	70	163	42.9%
Kidney	6(17.1%)	5(14.3%)	7(20.0%)	8(22.9%)	9(25.7%)	35	154	22.7%
Others	1(50.0%)	1(50.0%)	0(0.0%)	0(0.0%)	0(0.0%)	2	104	1.9%
Total	24(17.5%)	18(13.1%)	25(18.2%)	37(27.0%)	33(24.1%)	137	1028	13.3%

Weiss J, Kocher M, Immer FF; JTD 2015

«...Organwarteliste wird zur Sterbeliste»*



Weiss J, Beyeler F, Immer FF; SMW 2014



Konsequenzen für die Praxis

- **Potentielle Spender (Alter, Rea, etc.)**
- **Wartezeit ist schwierig abschätzbar**
 - *Blutgruppe O tendenziell länger*
 - *Patienten > 60 Jahre höhere Mortalität*
- **Zeitnahe Zuweisung an Tx-Zentrum**
- **Evaluation von Alternativen**
 - *Medikamentös*
 - *Assist Device*
- **Gute Zusammenarbeit auf nationaler Ebene**
 - *Urgentrequest*
 - *Zuteilungsmodalität*







