



Udruženje ljekara za nefrologiju, dijalizu i  
transplantaciju bubrega u Bosni i Hercegovini

# RENAL REPLACEMENT THERAPY IN BOSNIA AND HERZEGOVINA IN YEAR 2013

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## Thanks

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- Foca, Marijana Kovacevic
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- Gracanica, Jusuf Hodzic
- Istocno Sarajevo, Olivera Seslija
- Konjic, Indira Miljevic
- Laktasi, Aleksandar Arezina
- Livno, Zdenka Kelava
- Mostar, Slavica Coric
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- Trebinje, Branimir Cihoric
- Tuzla, Enisa Mesic
- Zenica, Vedad Gradincic
- Zvornik, Koviljka Bogicevic
- Zivinice, Ismet Kutlovac





# Centers for dialysis and transplantation in Bosnia and Herzegovina



DIJALYSIS CENTERS in B&H	Total number of patients in 2013. (by centers in FBiH, RS & Brčko district)
Banjaluka	184
Bihac	107
<b>Bijeljina</b>	303
<b>Brcko</b>	77
<b>Doboj</b>	138
Foca	17
Gradiska	42
<b>Gracanica</b>	91
Ilidza	58
Istocno Sarajevo	72
Konjic	22
Laktasi	108
Livno	36
Mostar	164
<b>Odzak</b>	87
Pedijatrijska klinika KCU Sarajevo	1
Prijedor	91
Sarajevo-KCU Klinika za HD	256
Sarajevo-KCU Klinika za nefrologiju	78
<b>Samac</b>	97
Tesanj	52
Travnik	123
Trebinje	39
<b>Tuzla</b>	302
Zenica	238
<b>Zvornik</b>	95
<b>Živinice</b>	68
<b>UKUPNO:</b>	<b>2.946</b>





## Distribution of dialysis patients in B&H at the day 31.12.2013. by age group and sex

Age group	All	Male	Female
0-19	25	17 (1,1%)	8 (0,7%)
20-44	454	282 (18,5%)	172 (15,4%)
45-64	1151	685 (44,96%)	466 (41,8%)
65-74	605	329 (21,6%)	276 (24,6%)
75+	407	212 (13,9%)	195 (17,5%)
Mediana	year 60,0	year 60,0	year 62,0





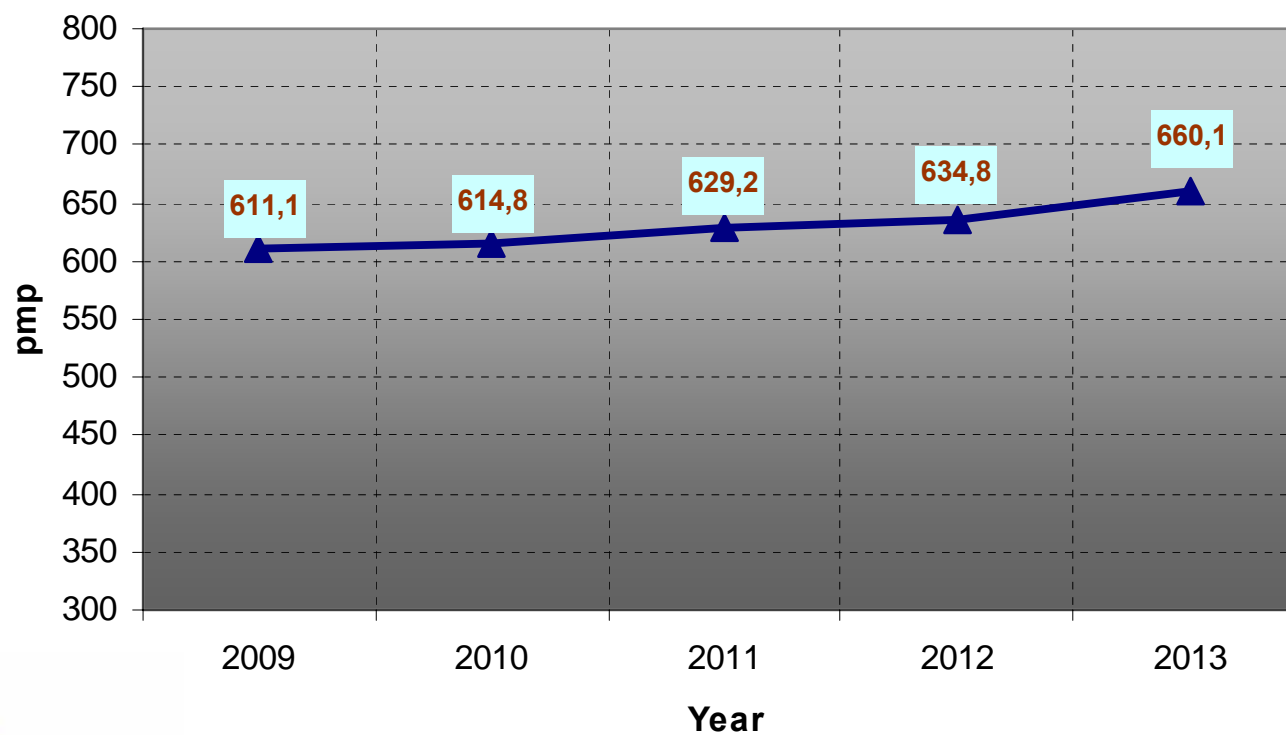
## Epidemiology chronic renal failure - prevalence

- Prevalence
- Incidence
- Primary renal disease
- Treatments modality
- Blood transmitted diseases
- Vascular access
- Survival
- Acute renal failure
- Outcome





## Prevalence (day >90) in the last 5 Years





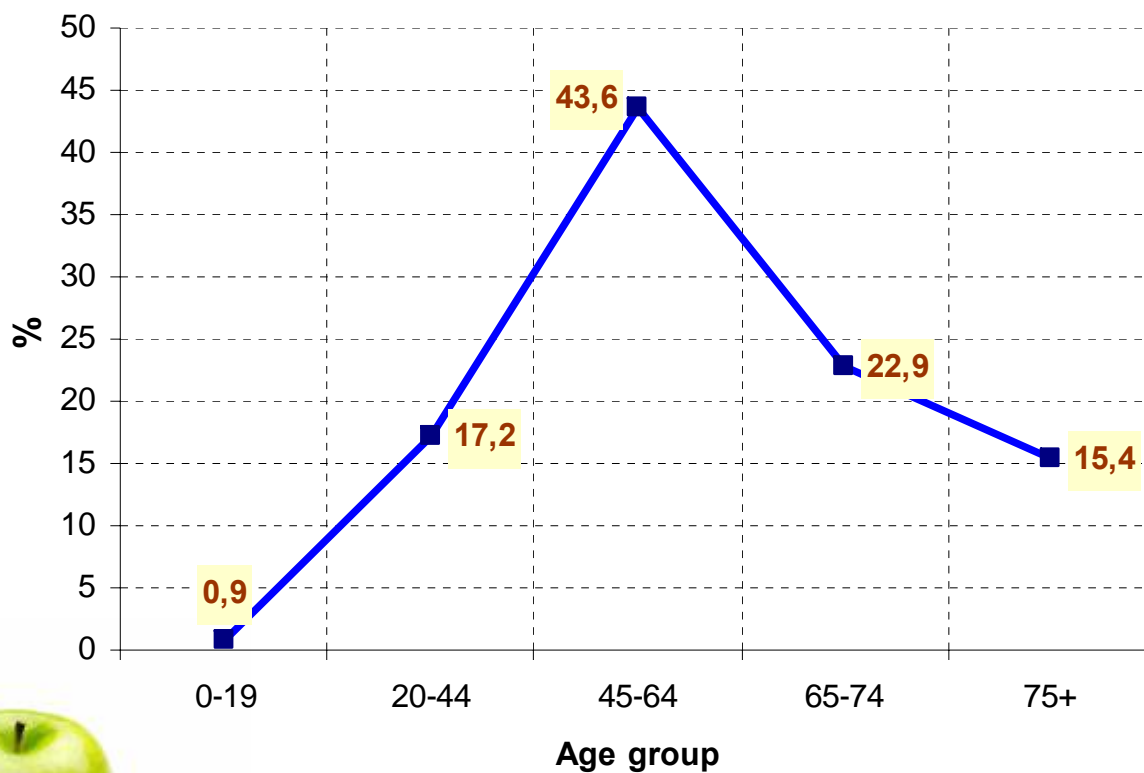
## Age and gender distribution of prevalent patients on day 31.12.2013. year

31. 12.2013	0-19	20-44	45-64	65-74	75+
Male (n)	17	282	685	330	212
Female (n)	8	172	466	274	196
Total (n/%)	25 (0,9%)	454 (17,2%)	1151 (43,6%)	604 (22,9%)	408 (15,4%)





## Age distribution of prevalent patients on day 31.12.2013. year– graphic display







## Epidemiology chronic renal failure - Incidence

- Prevalence
- **Incidence**
- Primary renal disease
- Treatments modality
- Blood transmitted diseases
- Vascular access
- Survival
- Acute renal failure
- Outcome





## Incidence in Bosnia and Herzegovina at day 1 comparation 2002.-2013.

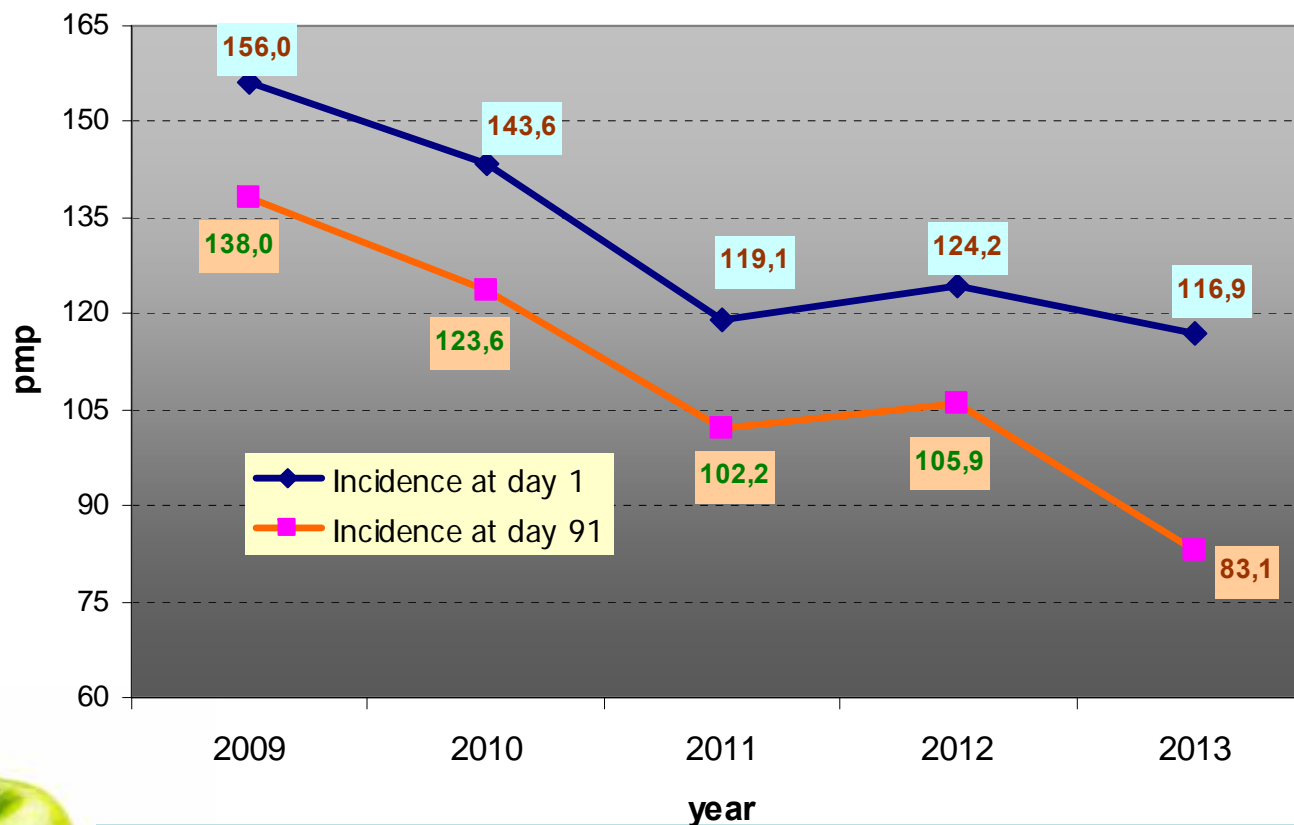
	Incidence in B&H (at day 1)			
	Year 2002		Year 2013	
	N	pmp	N	pmp
Federation B&H	-*	-*	247	-*
R. Srpska	-*	-*	157	-*
DC Brcko	-*	-*	11	-*
<b>Bosnia and Herzegovina</b>	<b>420</b>	<b>109,7</b>	<b>415</b>	<b>118,3</b>



-\* You can not display it, still, still, there are no reliable data on population in Bosnia and Herzegovina (Registry calculates with 3,508,000 inhabitants).



## Incidence (pmp) in the last 5 Years



Note:

The increase (or decrease) incidence was relatively because, still, there are no reliable data on population in Bosnia and Herzegovina (Registry calculates with 3,508,000 inhabitants).





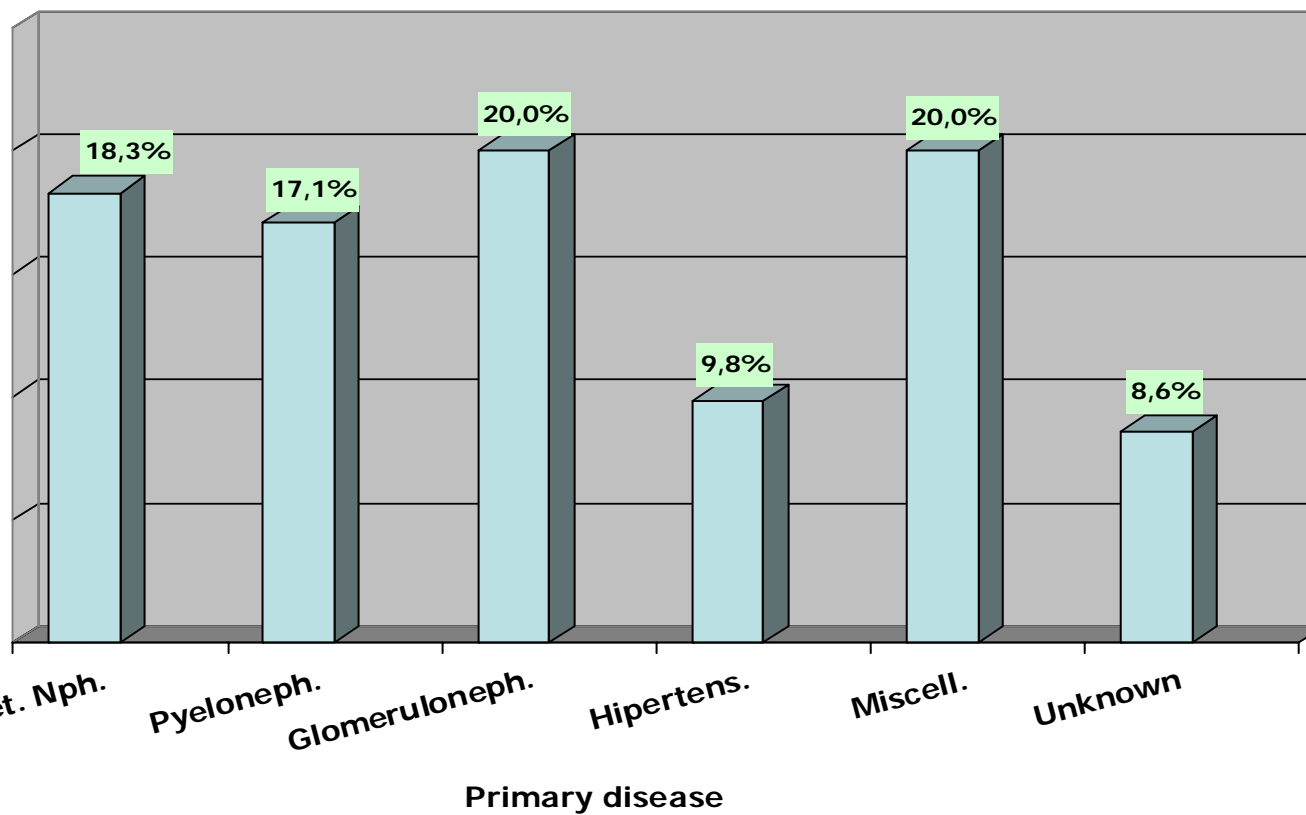
## Primary renal disease

- Prevalence
- Incidence
- **Primary renal disease**
- Treatments modality
- Blood transmitted diseases
- Vascular access
- Survival
- Acute renal failure
- Outcome

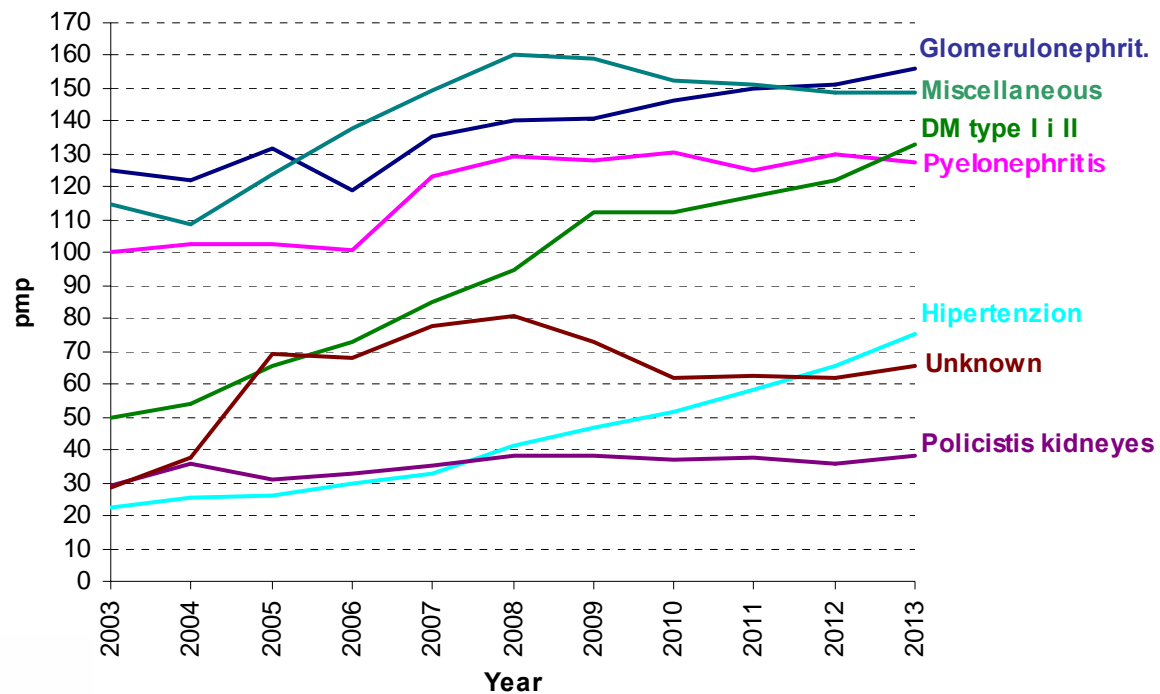




## Primary renal disease in Yearu 2013



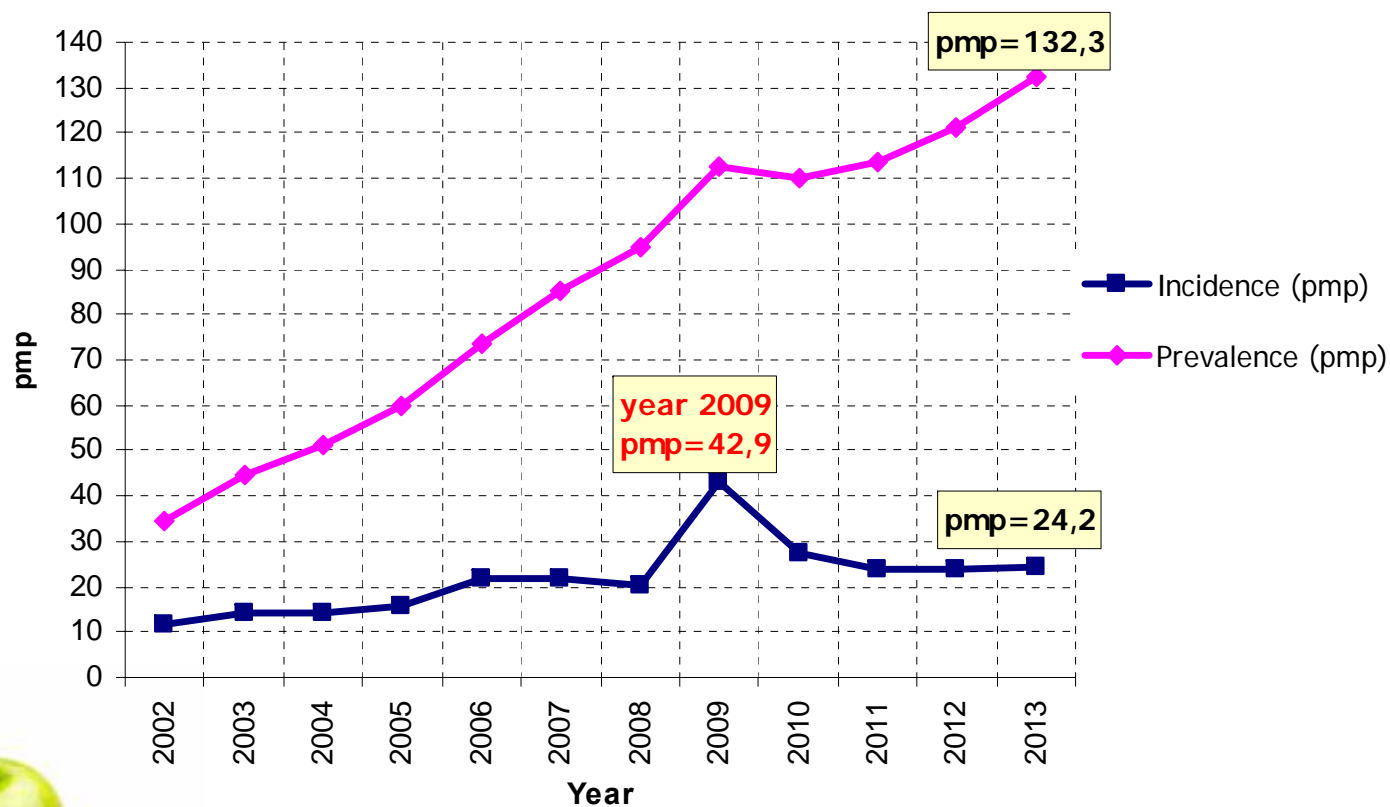
# Prevalence primary renal disease in years 2003-2013



**Note:**  
 The increase (or decrease) prevalence was relatively because, still, there are no reliable data on population in Bosnia and Herzegovina (Registry calculates with 3,508,000 inhabitants).



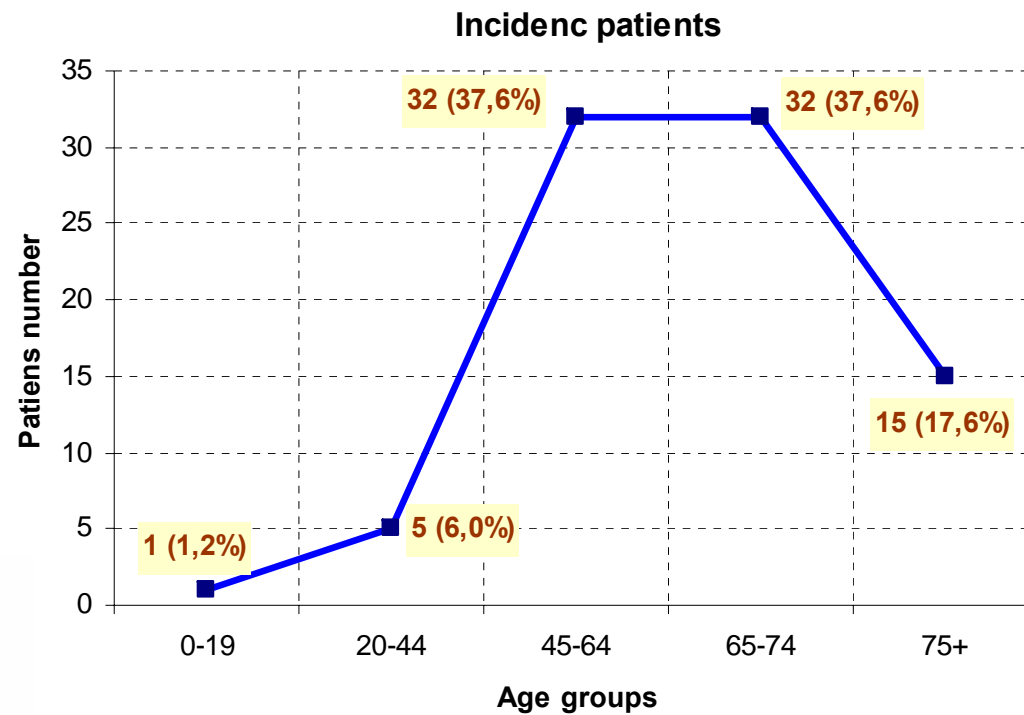
## Diabetic nephropathy in years 2002-2013





# Diabetic nephropathy in year 2013

## Age group incident patients

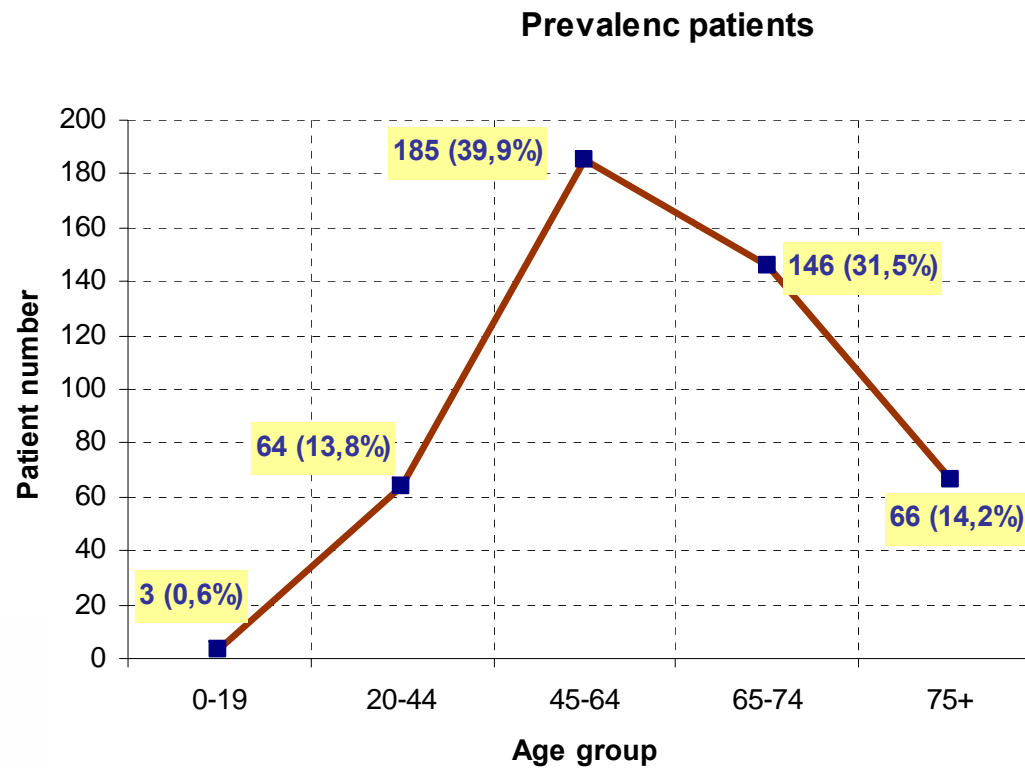






# Diabetic nephropathy in year 2013

## Age group prevalent patients

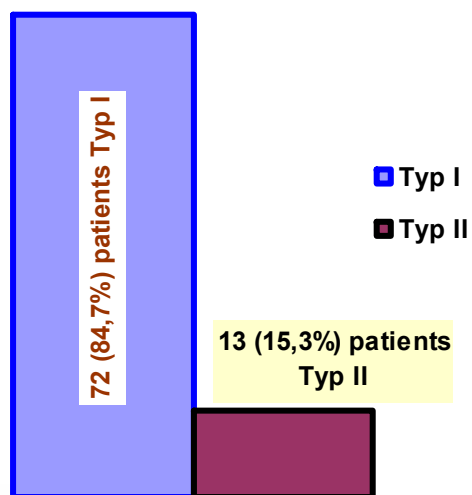




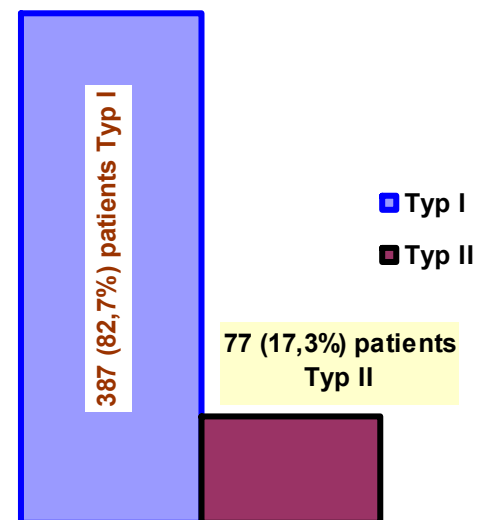
# Diabetic nephropathy in year 2013

## Diabetes typ in incidenc and prevalenc patients

Diabetic nephropathy, state of the day 31.12.2013 yea  
INCIDENC PATIENTS



Diabetic nephropathy, state of the day 31.12.2013 ye  
PREVALENC PATIENTS





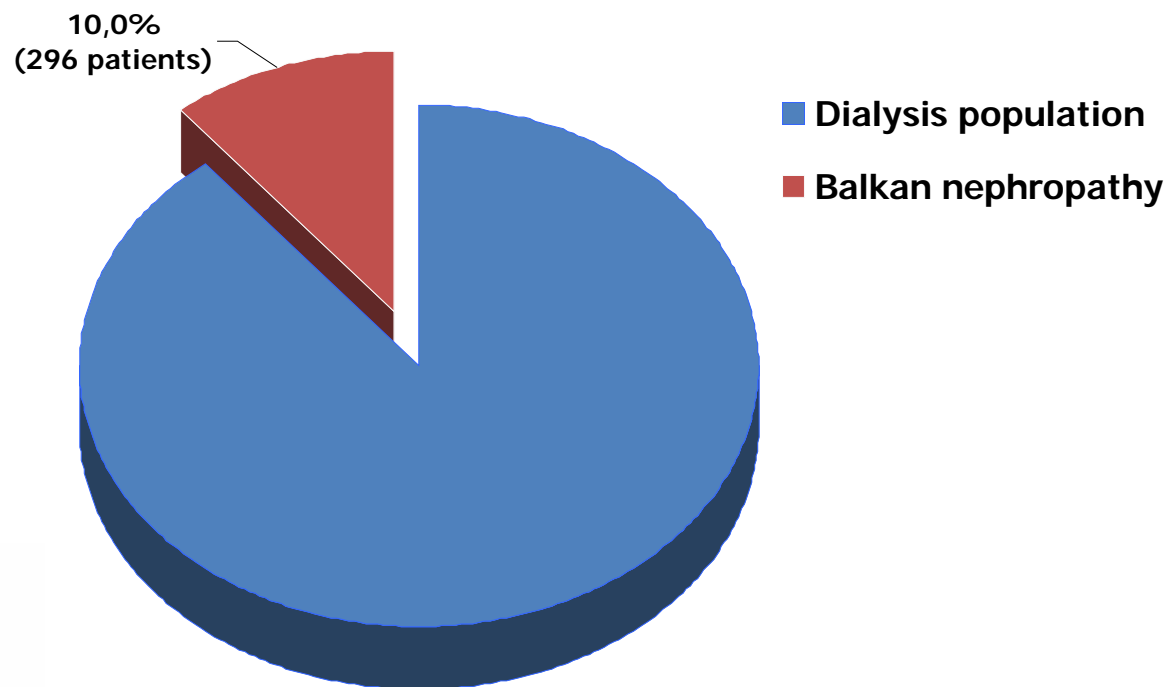
## Balkan endemic nephropathy in Year 2013

- Balkan endemic nephropathy is the most endemic renal disease in the north-east of Bosnia.
- Of 296 patients with Balkan nephropathy 84,8% were older than 65 years.
- Patients with Balkan nephropathy constitute 10,0% of the total number of dialysis patients.





## Balkan endemic nephropathy in Year 2013 (graphic display)





## Balkan endemic nephropathy in the last 5 years

At day 31.12.	2009	2010	2011	2012	2013
Number of patients/pmp	306/87	291/83	328/94	314/89	<b>296/82,9</b>
Males (%)	50,0%	51,2%	51,5%	50,6%	<b>51,0%</b>
Females (%)	50,0%	48,8%	48,5%	49,4%	<b>49,0%</b>





## Age group of patients with Balkan endemic nephropathy c

31. 12.2013	0-19	20-44	45-64	65-74	75+
Male (n/%)	<b>0 /</b> 0,0%	<b>1 /</b> 0,8%	<b>22 /</b> 17,2%	<b>54 /</b> 42,2%	<b>51 /</b> 39,8%
Female (n/%)	<b>0 /</b> 0,0%	<b>0 /</b> 0,0%	<b>17 /</b> 13,7%	<b>49 /</b> 39,5%	<b>58 /</b> 46,8%



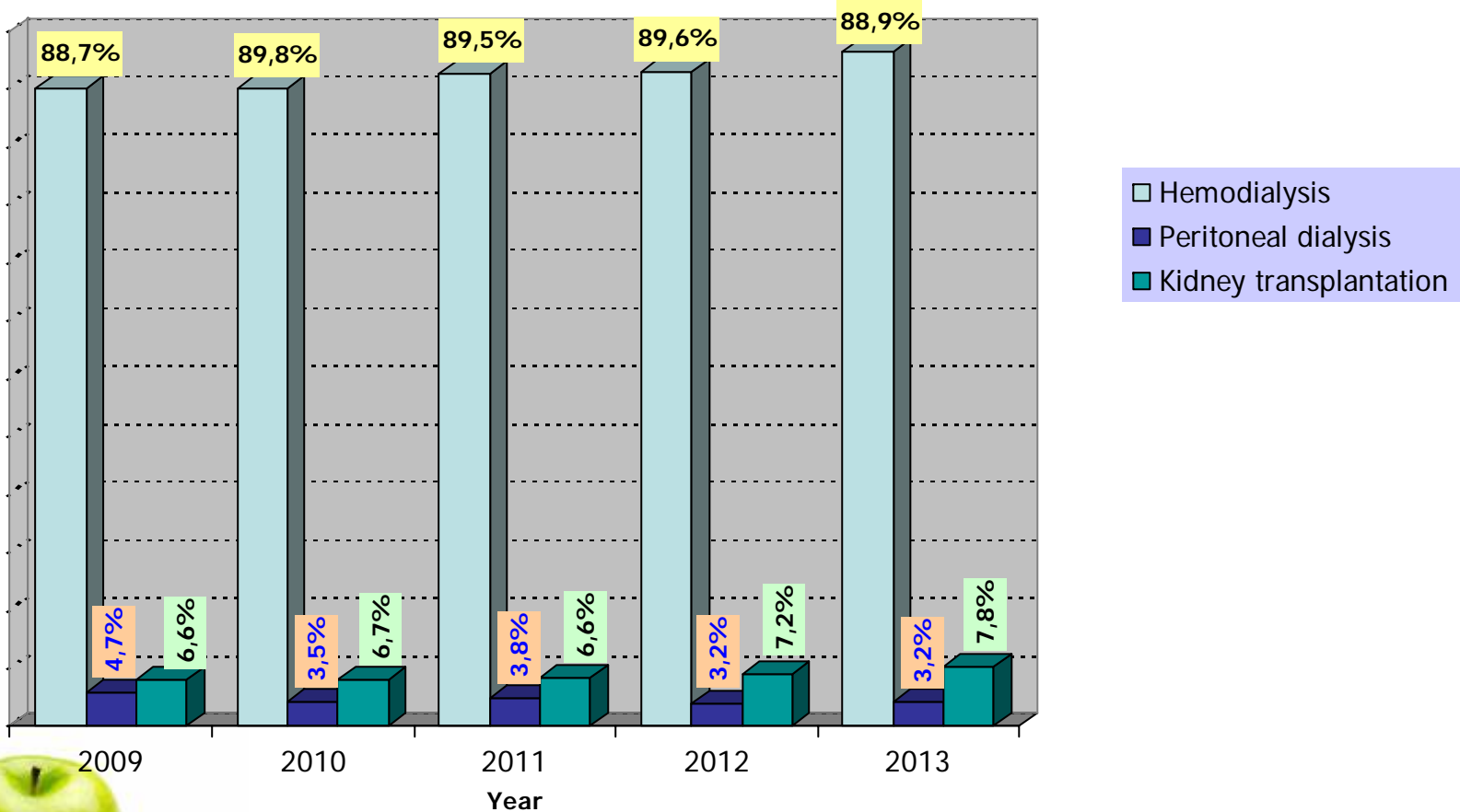


## Epidemiologija HBB – Modaliteti tretmana

- Prevalence
- Incidence
- Primary renal disease
- **Treatments modality**
- Blood transmitted diseases
- Vascular access
- Survival
- Acute renal failure
- Outcome



# Modality patients treatment in the last 5 years (December 31)







## Percentage of prevalent patients treated with erythropoietin during 2003rd to 2013th year

	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
HD (%)	81,4%	80,5%	82,9%	90,8%	87,1%	87,6%	86,7%	84,0%	89,1%	87,9%	82,4%
PD (%)	27,5%	28,8%	40,7%	50,0%	60,4%	69,1%	76,3%	82,4%	82,2%	58,8%	77,4%
Tx (%)	-*	-*	-*	-*	-*	4,0%	3,6%	4,9%	4,3%	0,5%	1,5%

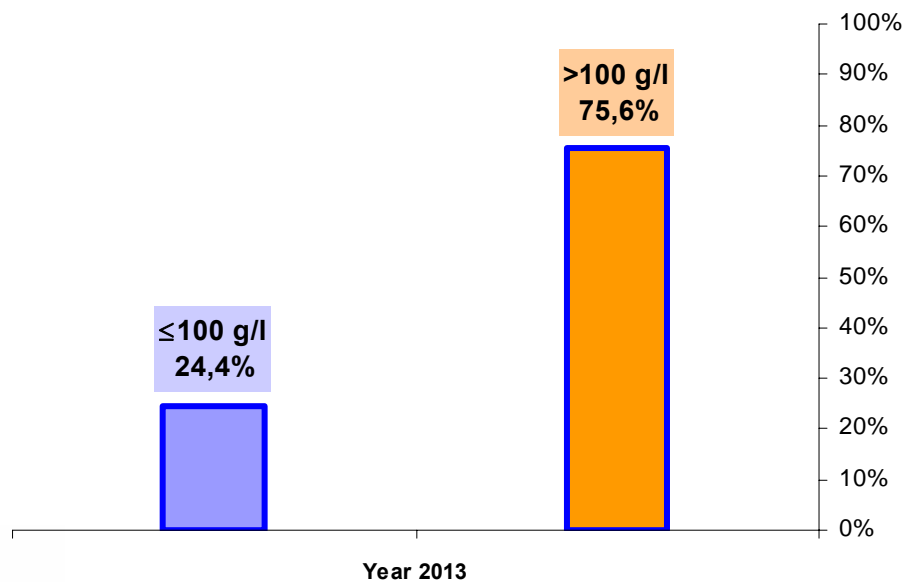
-\* no data





# Hemoglobin distribution of dialysis patients older than 20 years at end of year

Hemoglobin values (g/l) in december 2013





## Blood transmitted diseases

- Prevalence
- Incidence
- Primary renal disease
- Treatments modality
- **Blood transmitted diseases**
- Vascular access
- Survival
- Acute renal failure
- Outcome





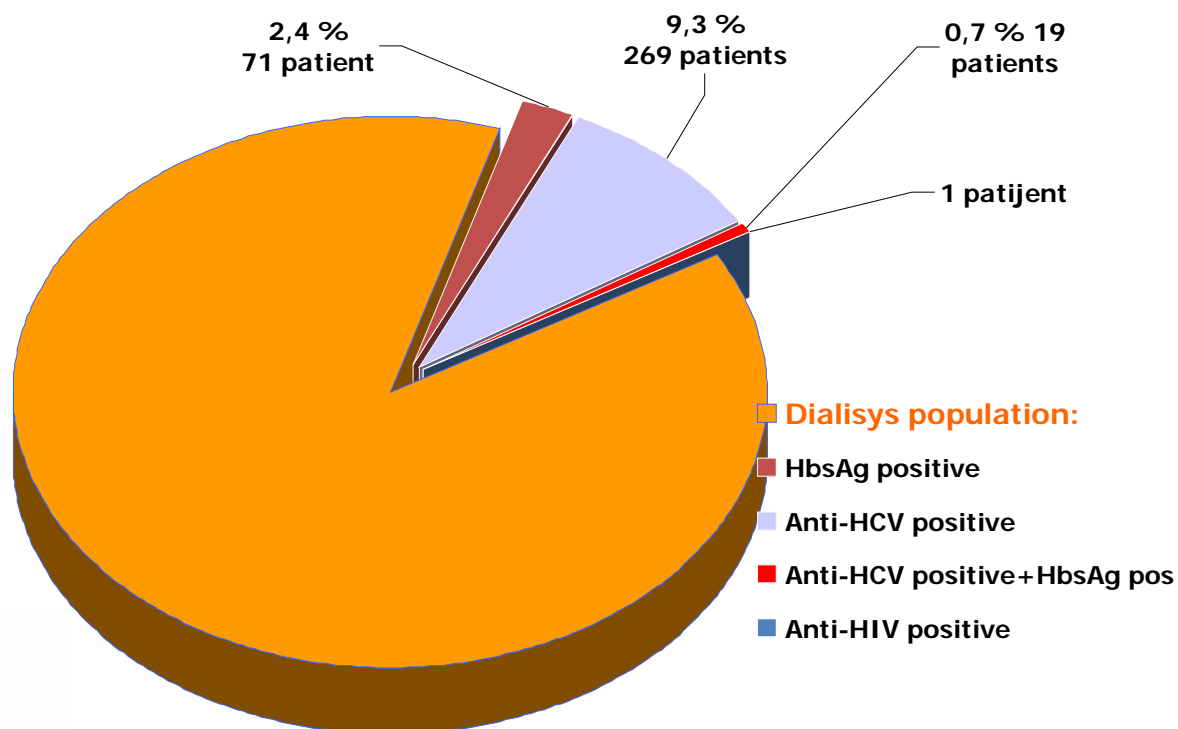
## Blood transmitted diseases in the period 2009-2013 year

31.12.	2009	2010	2011	2012	2013
HbsAg positive (%)	3,8%	3,0%	2,8%	0,0%	2,4%
HCV positive (%)	11,5%	13,0%	11,9%	10,7%	9,3%
HbsAg positive & HCV positive (%)	0,8%	0,9%	0,7%	0,7%	0,7%
HIV positive (%)	0,0%	0,0%	0,0%	1 patient	1 patient





## Blood transmitted diseases – graphic display (at day 31.12.2013 year)





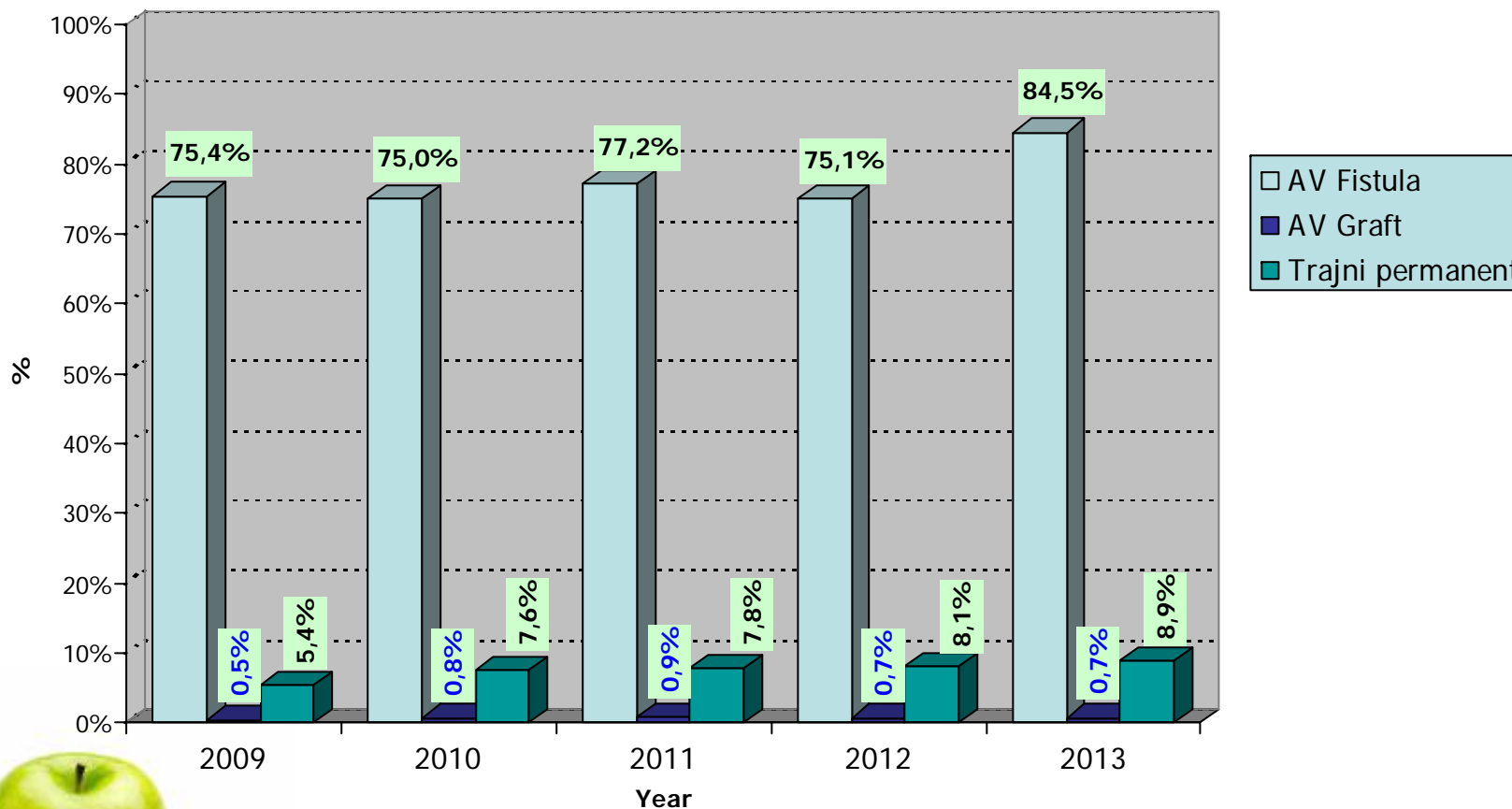
## Vascular access

- Prevalence
- Incidence
- Primary renal disease
- Treatments modality
- Blood transmitted diseases
- **Vascular access**
- Survival
- Acute renal failure
- Outcome



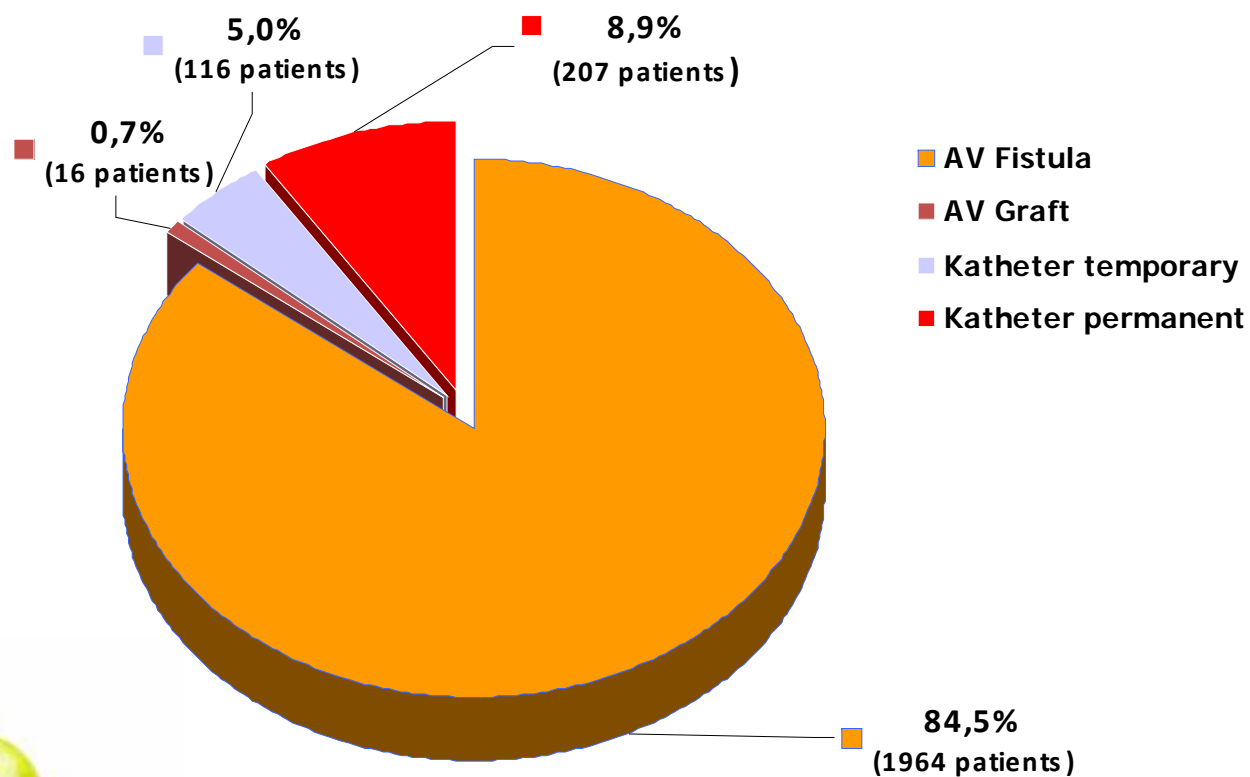


## Vascular access for hemodialysis in the last 5 years (at day 31.12. december)





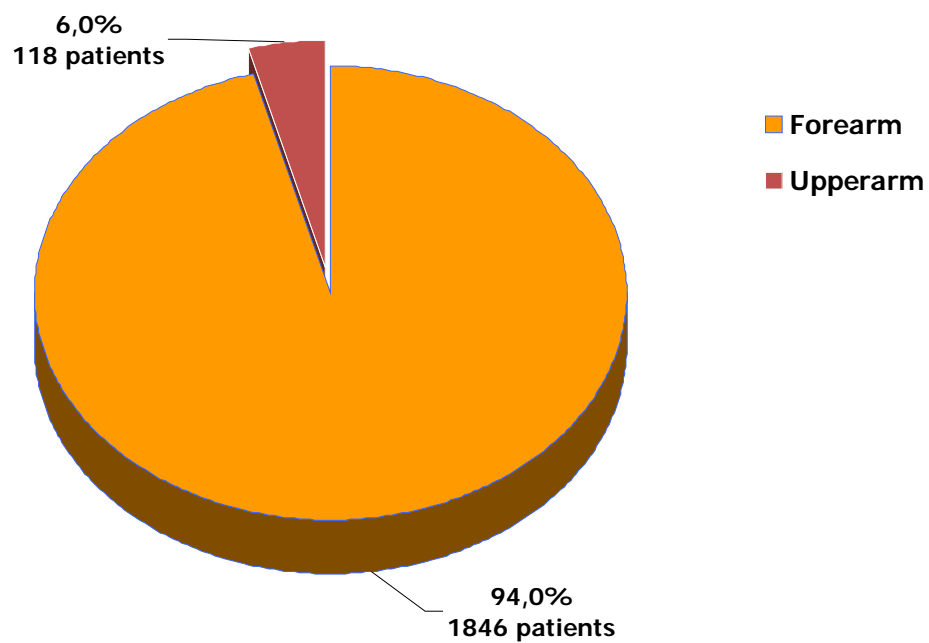
## Vascular access for hemodialysis – graphic display (at day 31.12.2013 year)





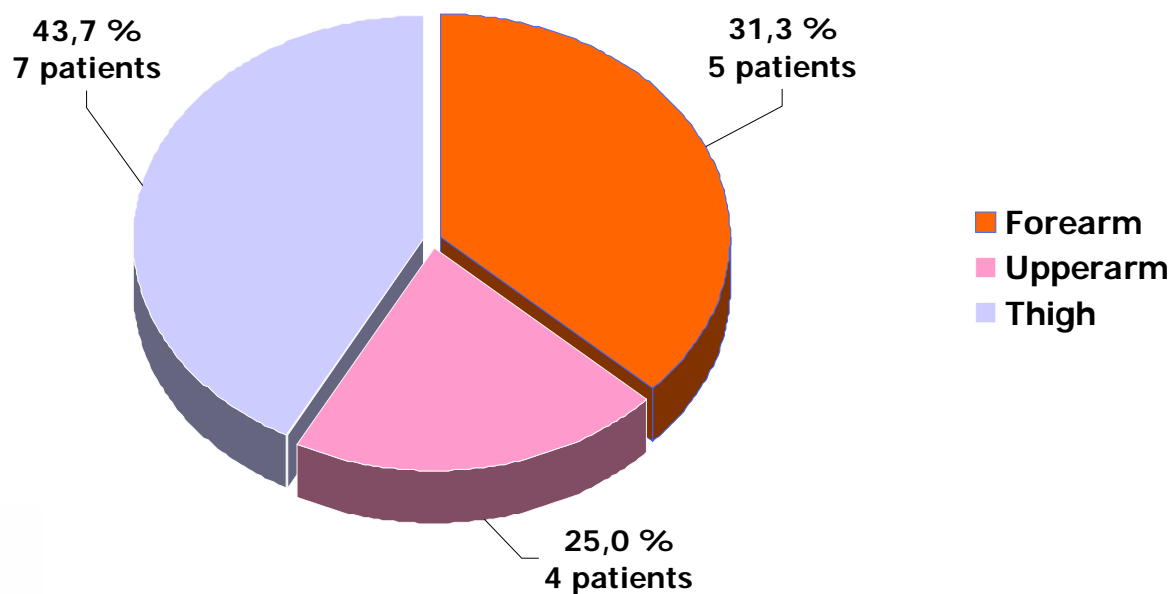


## Vascular access for hemodialysis - AV fistula





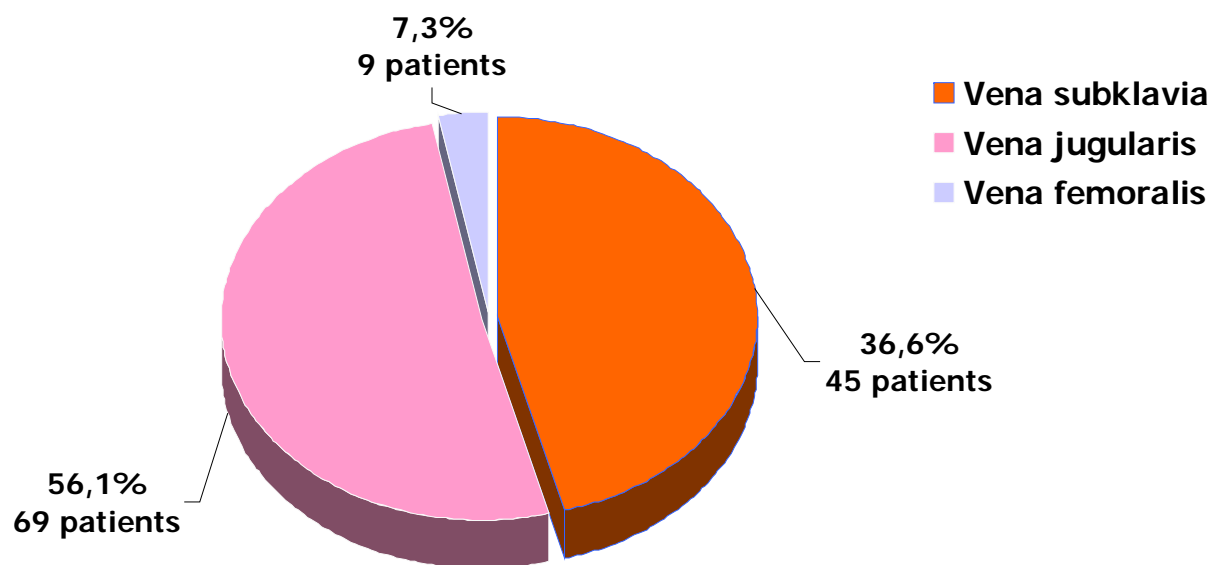
## Vascular access for hemodialysis - AV graft





## Vascular access for hemodialysis – temporary catheter

**Temporary catheter at the end of 2013 had  
123 (4,7%) in hemodialysis patients**





## Vascular access for hemodialysis – permanent catheter

**Permanent catheter at the end Year 2013  
had 260 (9,8%) hemodialysis patients**



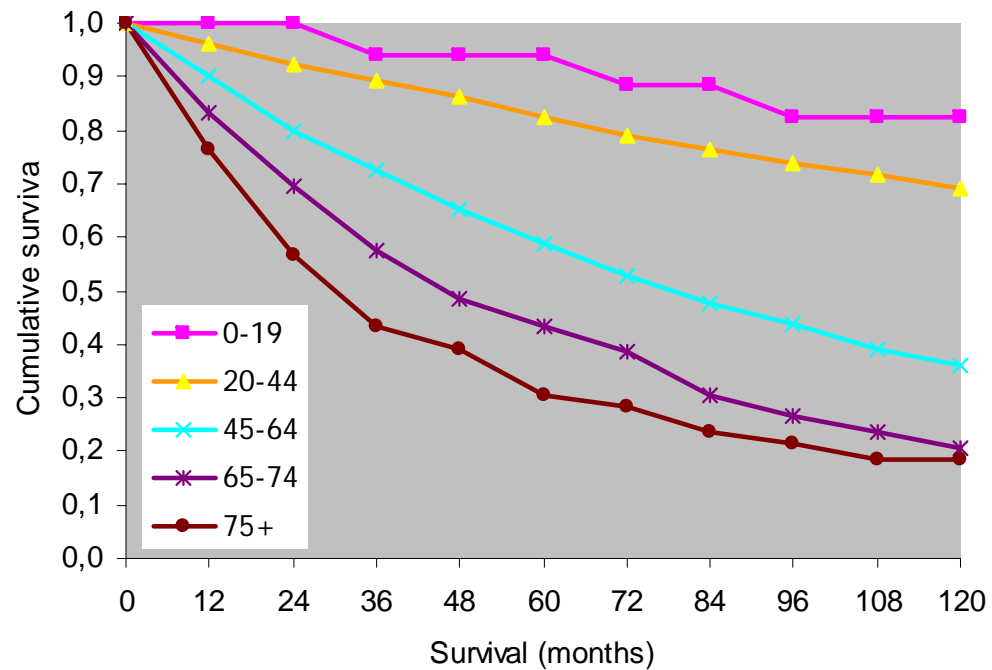


# Survival

- Prevalence
- Incidence
- Primary renal disease
- Treatments modality
- Blood transmitted diseases
- Vascular access
- **Survival**
- Acute renal failure
- Outcome

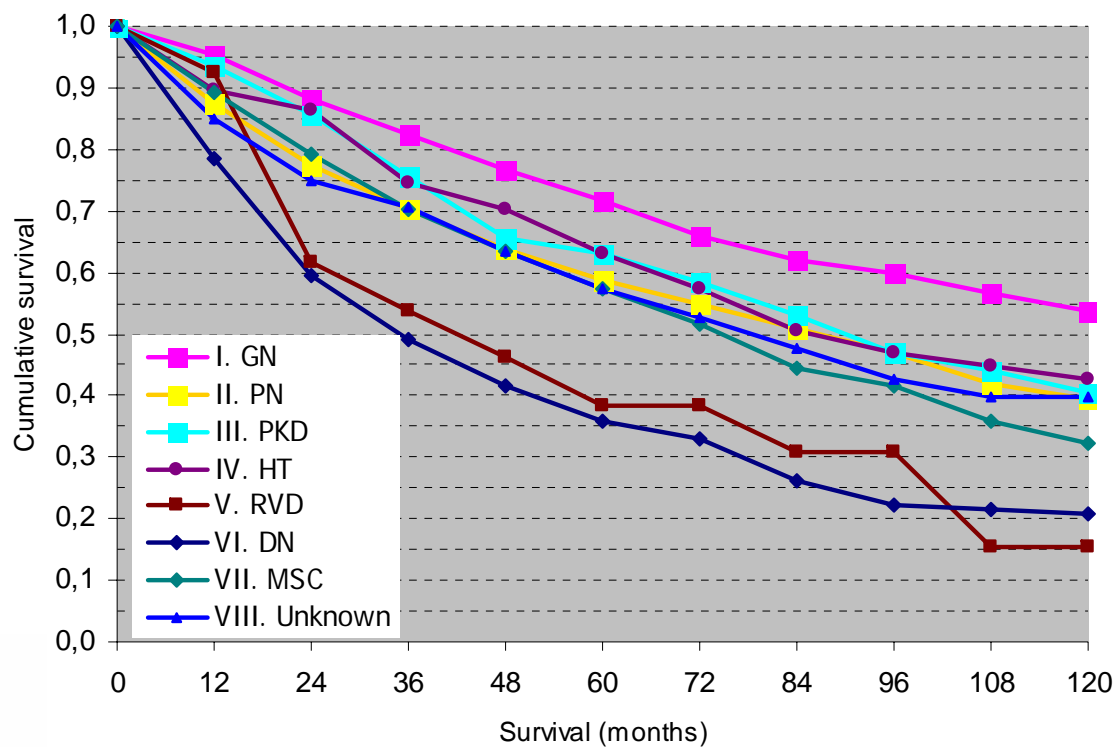


## Survival 2003-2013, by age group



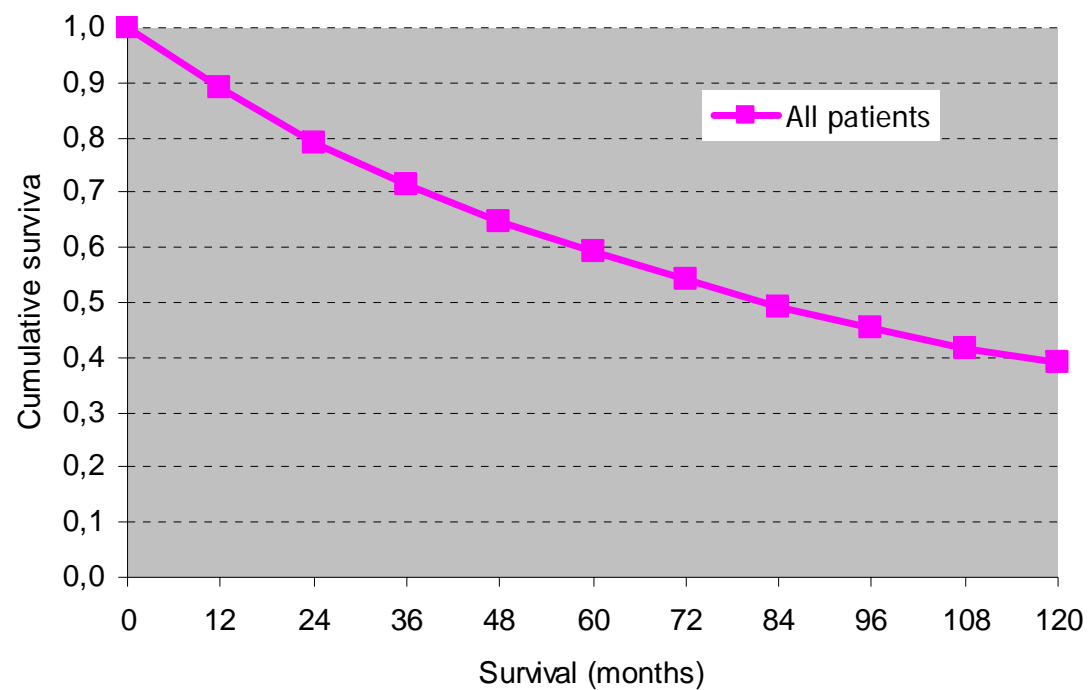


## Survival (by groups of diseases)





## Survival 2003-2013, all patients







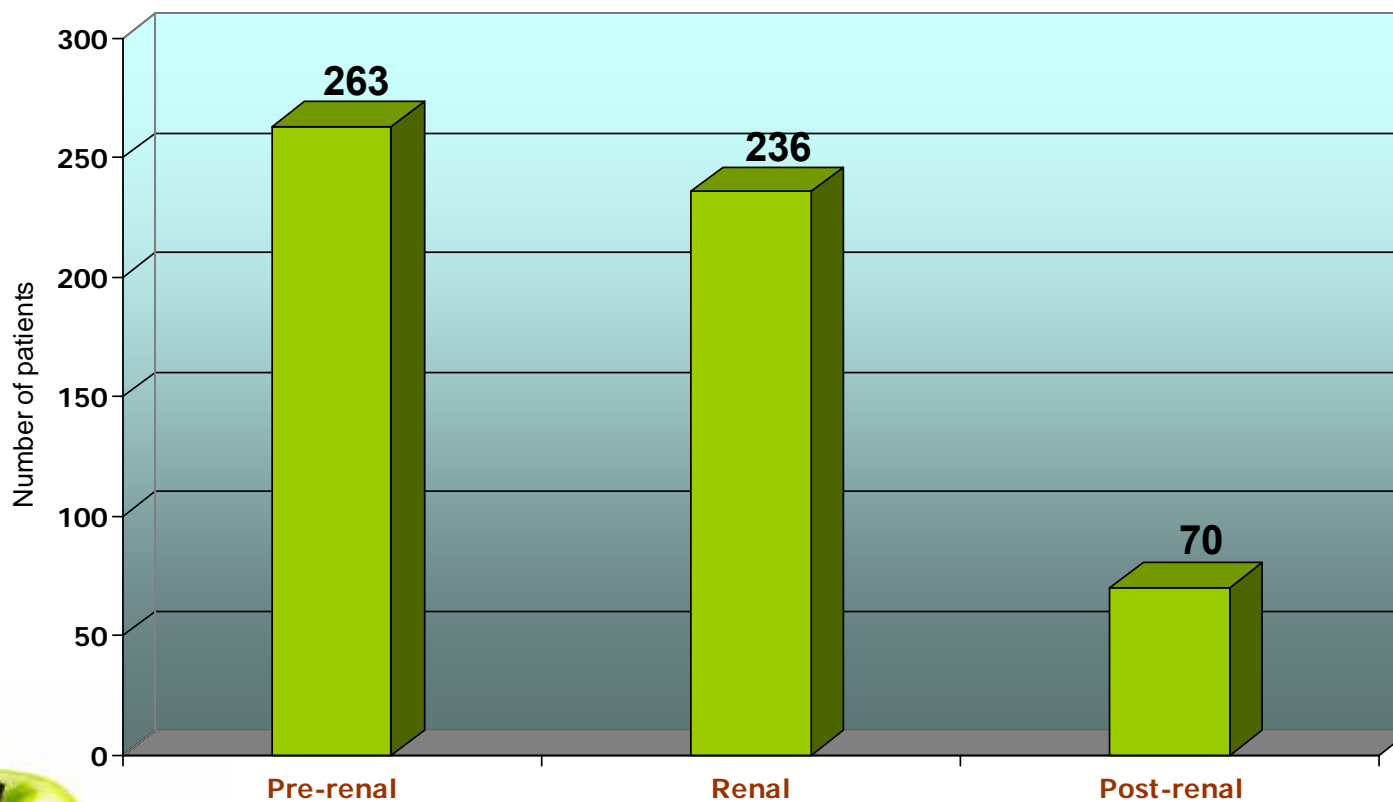
## Acute renal failure in Year 2013

- Prevalence
- Incidence
- Primary renal disease
- Treatments modality
- Blood transmitted diseases
- Vascular access
- Survival
- Acute renal failure
- Outcome



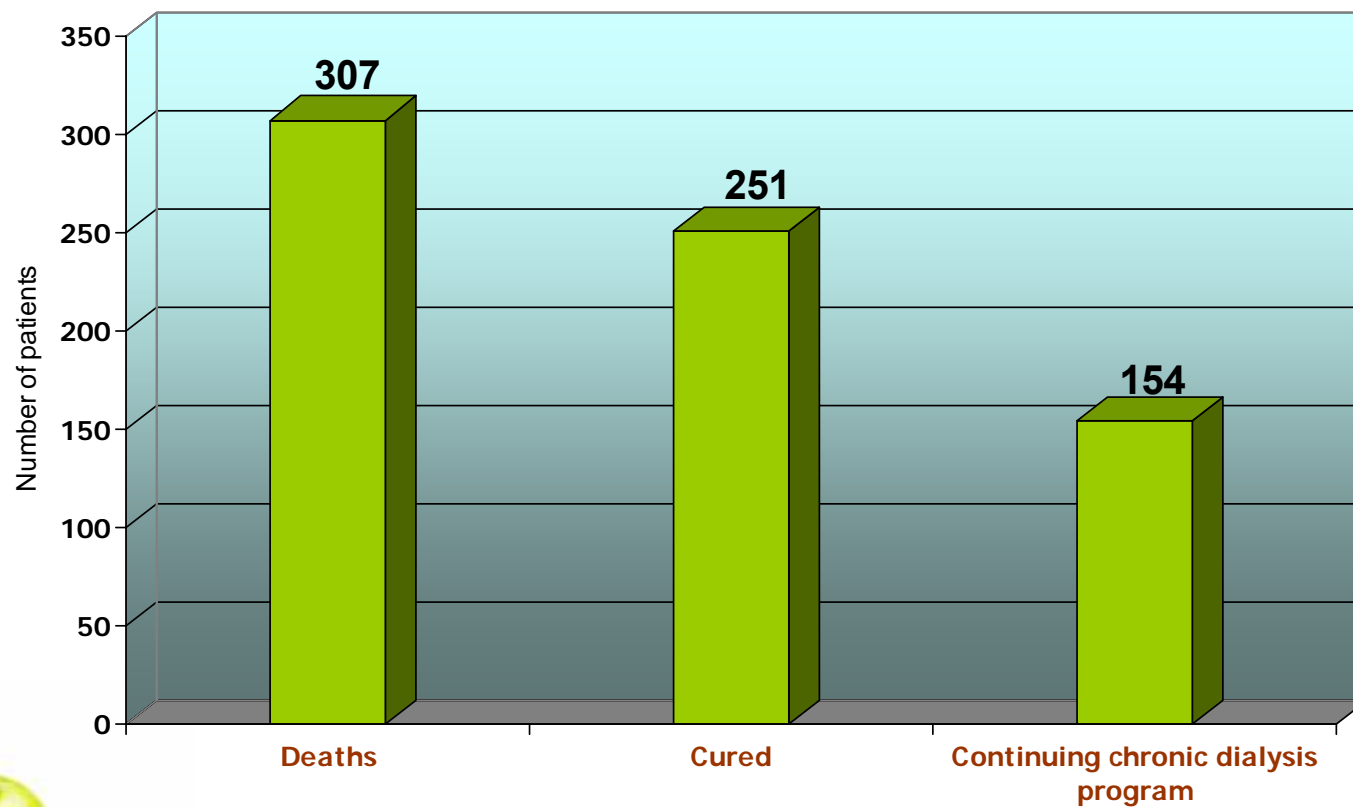


## Causes acute renal failure





## Outcome acute renal failure





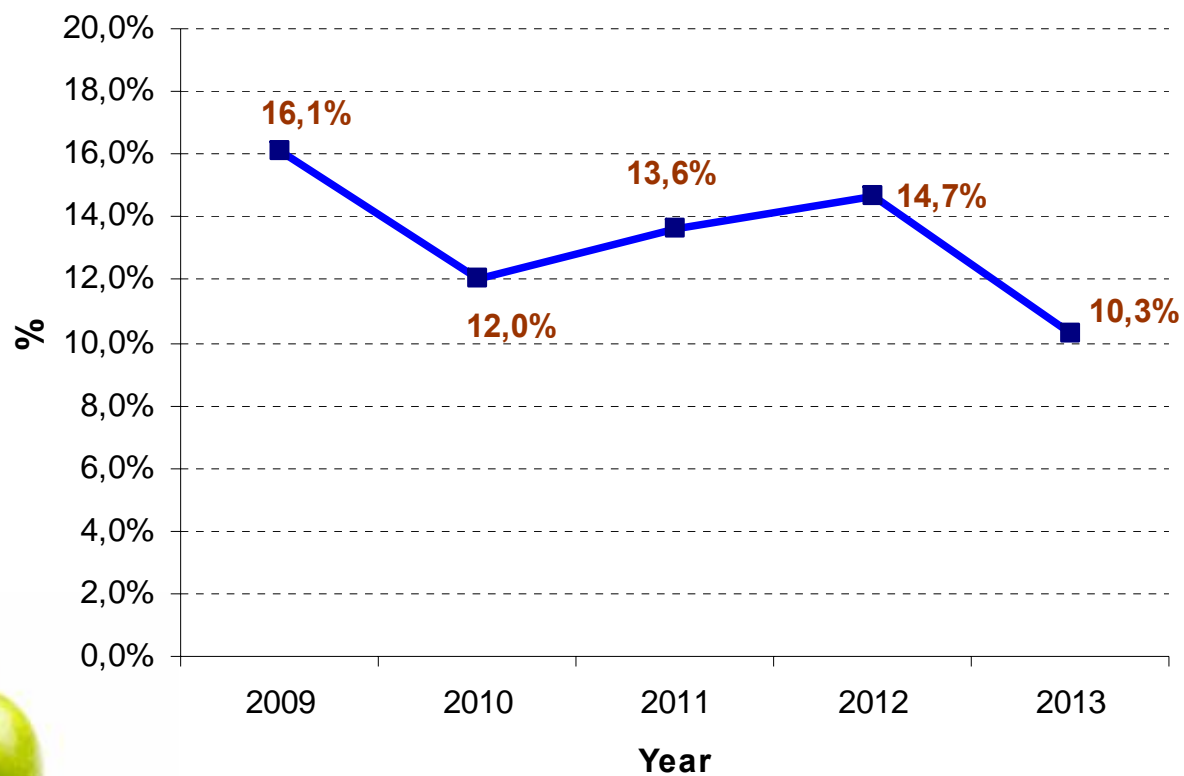
## Ishod

- Prevalence
- Incidence
- Primary renal disease
- Treatments modality
- Blood transmitted diseases
- Vascular access
- Survival
- Acute renal failure
- Outcome

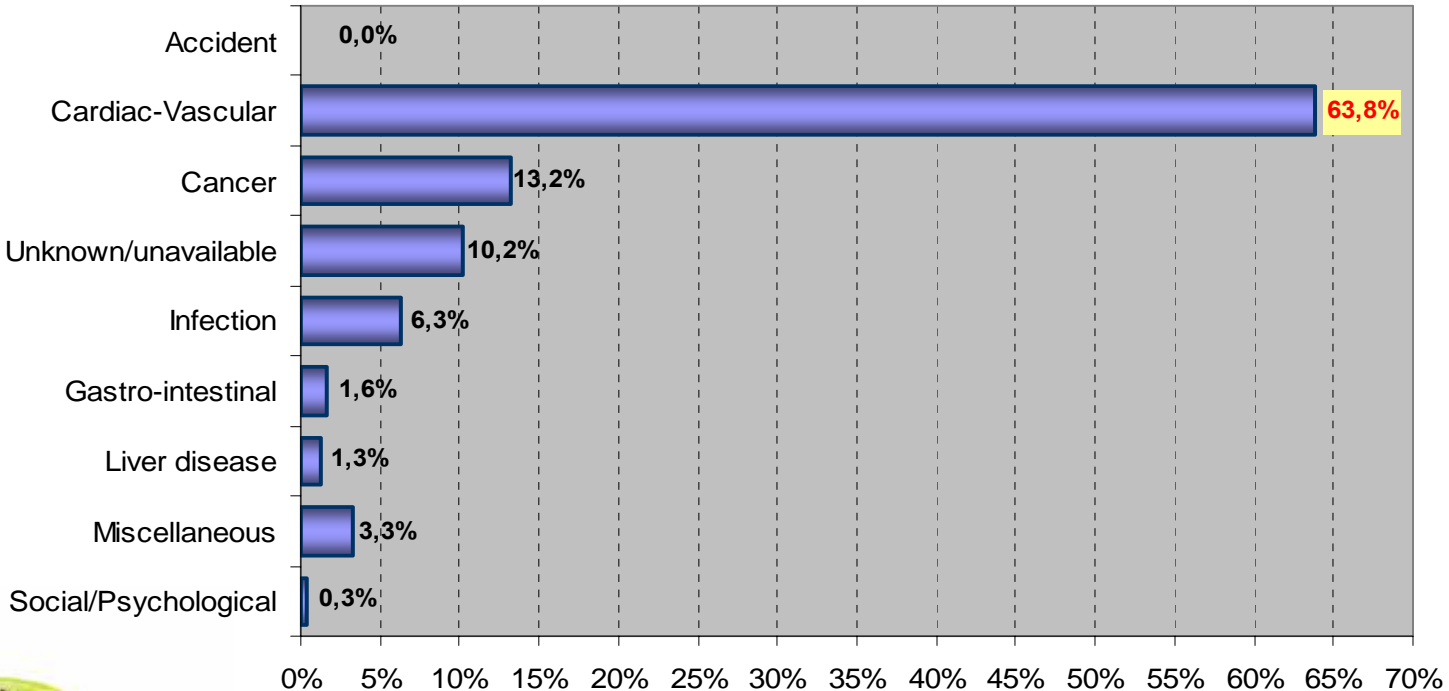




## Mortality rate of patients on dialysis in the last 5 years

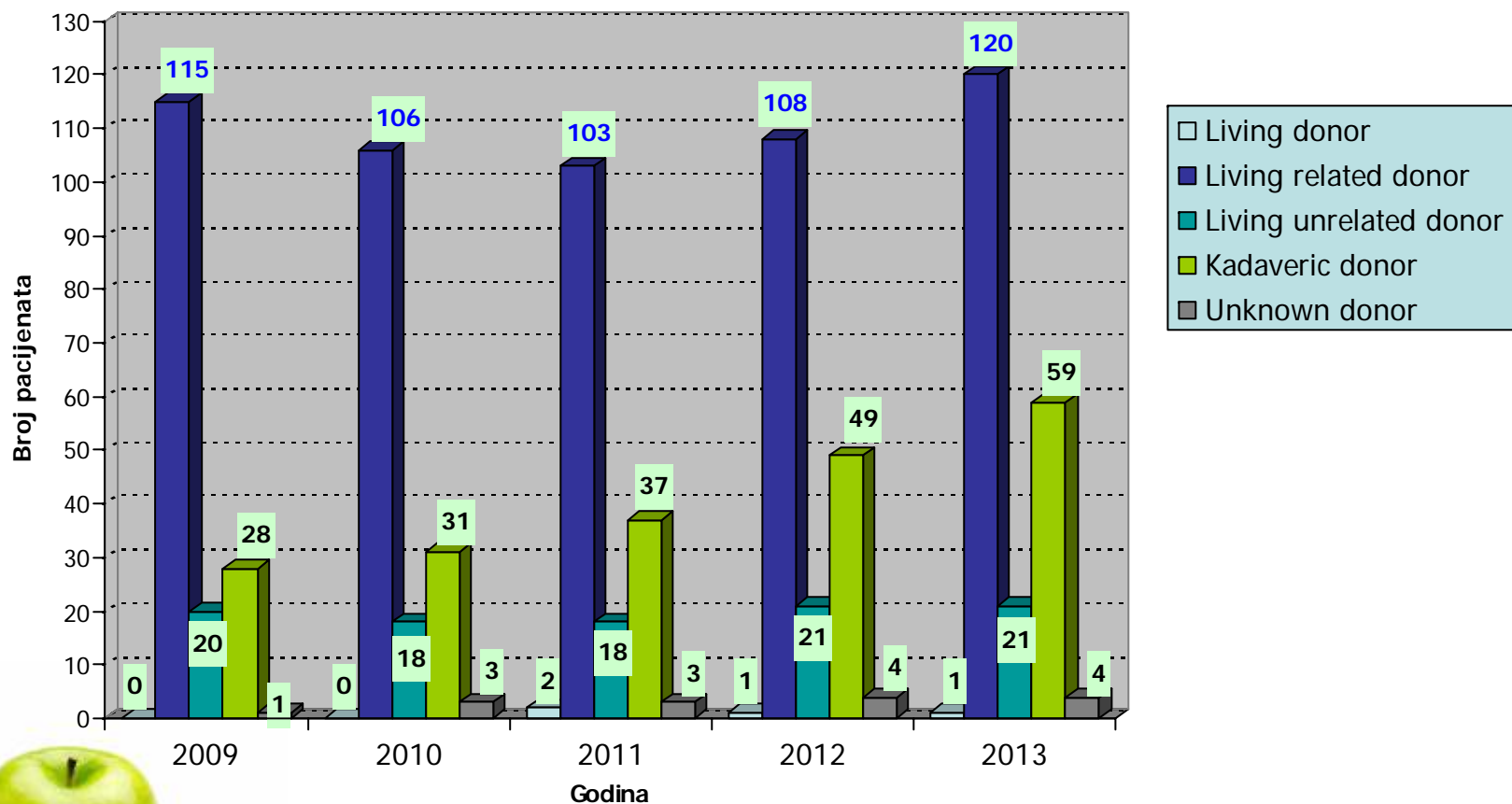


# Causes of mortality of dialysis patients in Year 2013



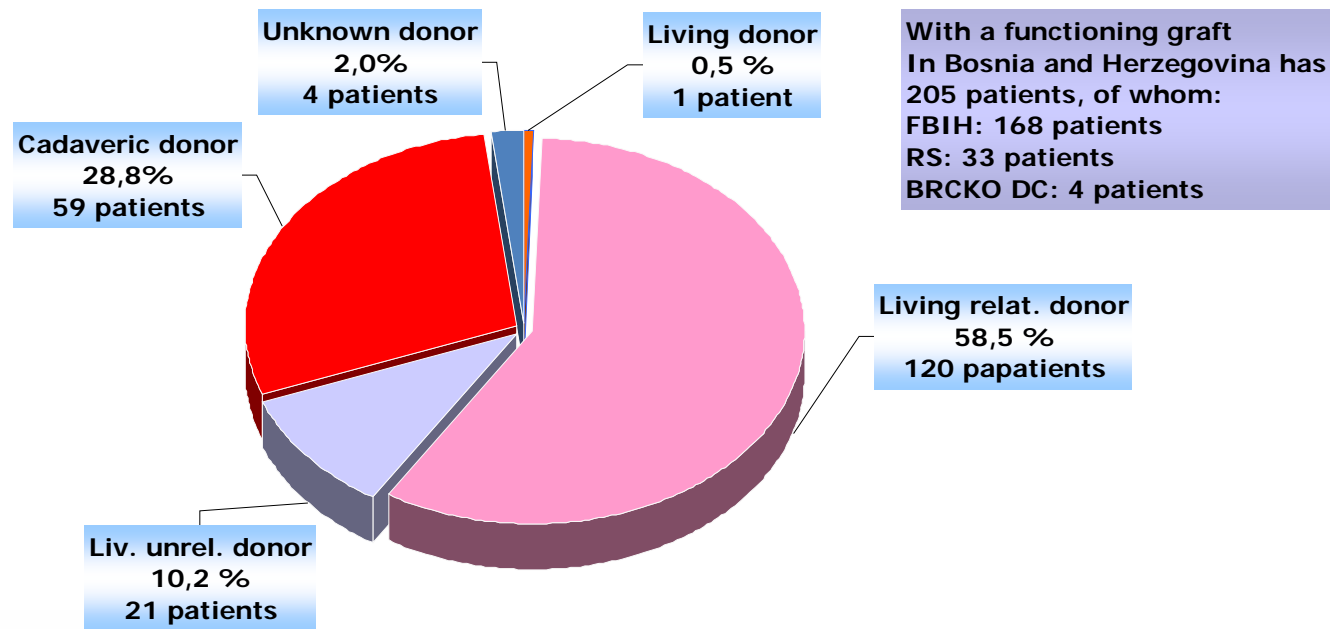


## The structure and the number of patients with functional renal graft in the last 5 years (December 31)





## The structure and the number of patients with functional renal graft (31.12.2013)

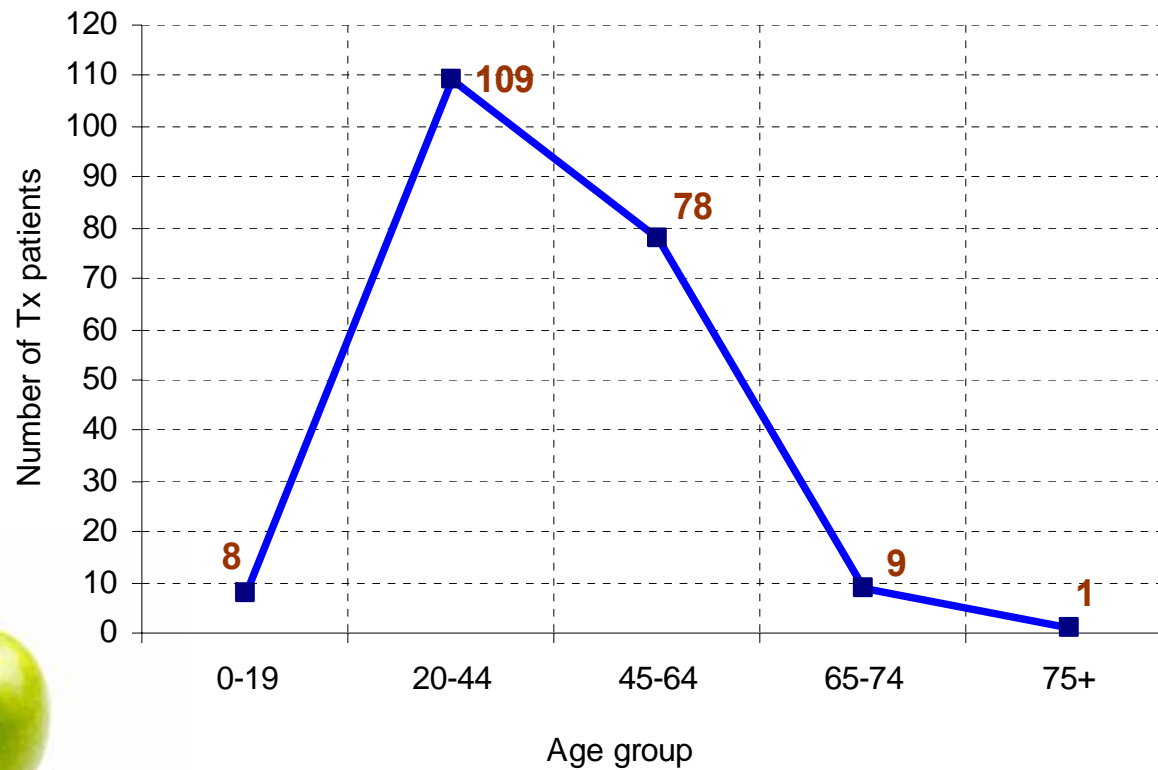






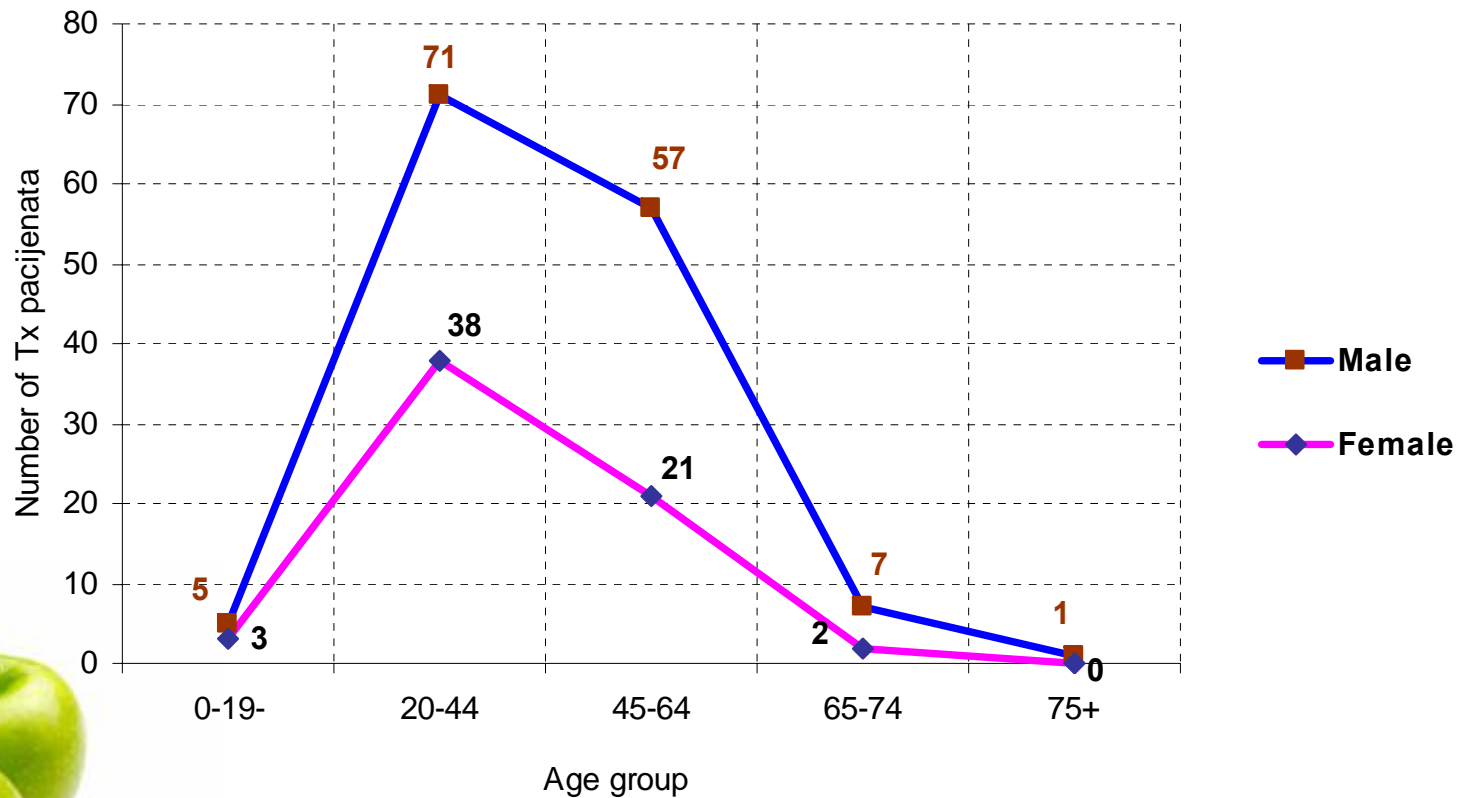
# Age group of patients with functioning graft on the day 31.12.2013 year

Age group of patients with functioning graft





## Age group and gender of patients with functioning graft on the day 31.12.2013 year





## Conclusions

- Number of dialysis patients in Bosnia and Herzegovina continues to increase; 2002<sup>nd</sup> (when the register is established) the number was 1.531 and December 31.2013 year 2.642 an increase of 72,6%.
- The incidence of dialysis patients >90 days 2013th amounted to 84,1 pmp., but, talk about the increase or decrease of the same is questionable because of known reasons, there is still no reliable data on the number and structure of the population in Bosnia and Herzegovina (the Registry calculates with 3,508,000 inhabitants).
- The most common causes of renal failure in Bosnia and Herzegovina are:
  - Glomerulonephritis
  - Pyelonephritis
  - Diabetes mellitus (typ I i II)
  - + Balkan nephropathy, and
  - Hypertension





## Conclusions (continued)

- Diabetes mellitus Typ I and II, (December 31), is present in 466 patients, or 17,6% compared to the total number of patients.
- Balkan endemic nephropathy, (December 31), is present in 252 patients, or 9,5% compared to the total number of patients.
- In the last 5 years we can see a slight reduction or stagnation of blood transmitted diseases in dialysis patients, especially when it comes to hepatitis.
- Survival in the period 01.01.2003. - 31.12.2013. on a sample of 421 patients died 286, one-year survival of 19% and a median survival of 66 months, which is compatible with international standards.
- The death rate in 2013 was 10.3% of total cases in 2013 (2,946) and is correlated with age dialysis patients, because in 2013 there were a total of 38.3% of patients aged 65 years and over.





Thank you for your attention!

