

Current status of HCV infection in hemodialysis patients in Egypt

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OBJECTIVES

Egypt has the highest prevalence of hepatitis C virus (HCV) in the world (14.7% of the population). Egypt also has the highest prevalence of HCV in HD patients. We aimed to survey HCV in HD patients in Egypt, assessing its prevalence, seroconversion rate, and risk factors for seroconversion.

METHODS

The study was implemented by the nephrology department, Ain Shams University) from 2009 to 2012. We retrospectively revised the records in multi-hemodialysis centers that have valid follow-up records. We have enrolled 22,070 patients on regular HD in multi-hemodialysis centers in 20 Egyptian governorates. All patients were evaluated using a questionnaire form for assessment of risk factors for HCV seroconversion such as; age, gender, duration of HD, blood transfusion, switching between dialysis centers, history of schistosomiasis, history of HBsAg, family history of HCV and B and the cause of chronic kidney disease.

Figure 2: serroconversion at time of data collection

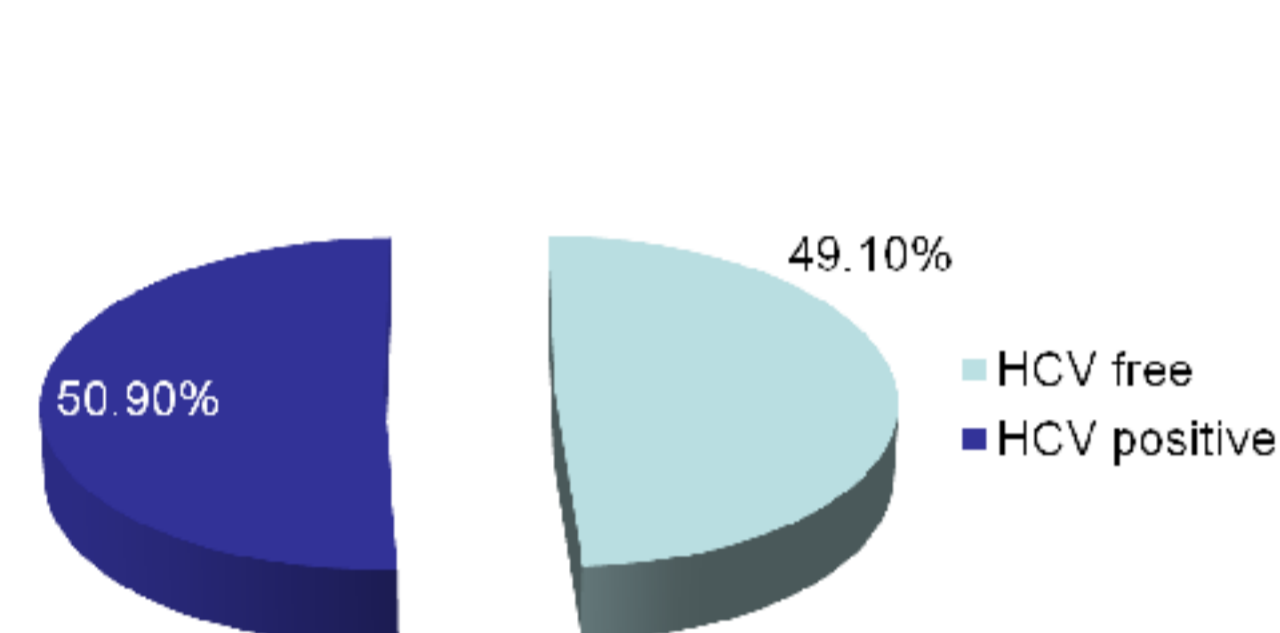


Figure 1: the main causes of CKD5

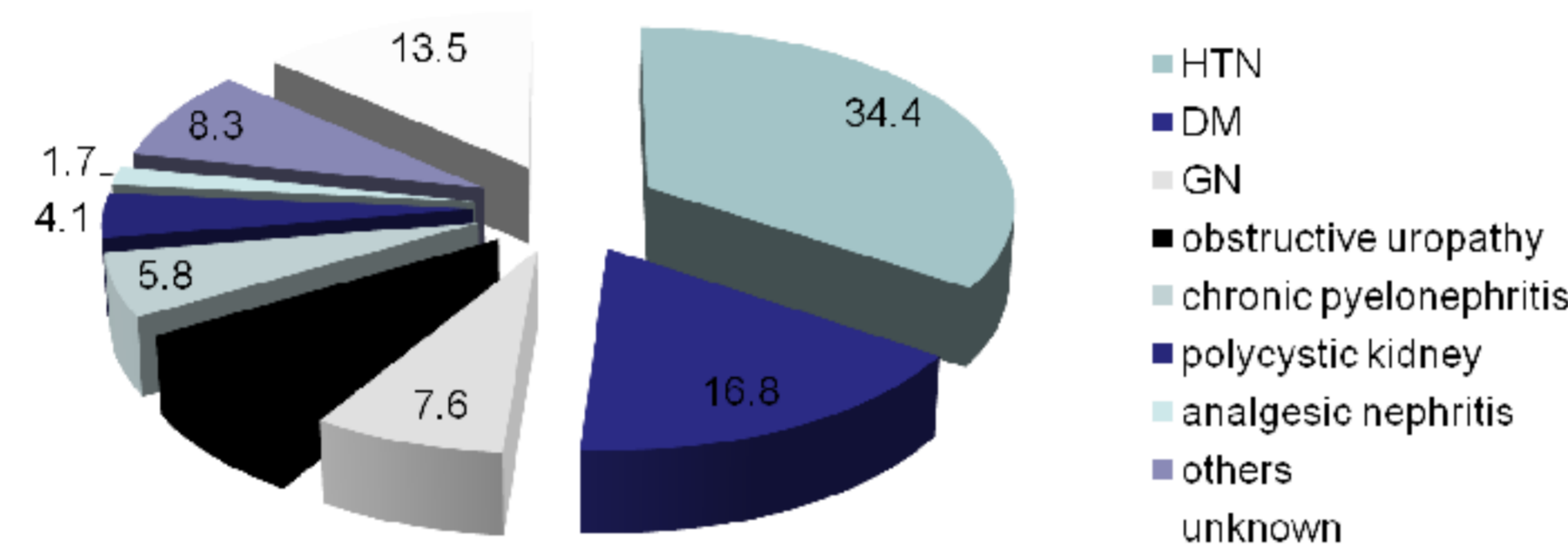


Table 1: Descriptive data and comparison of studied population

		No	%	HCV state		X ²	P value
				Negative	positive		
Age in years (51.52±13.52)						156.6	0.000
Dialysis duration in months (50.38±40.04)							
Sex	Male	13003	58.92%	57.3%	61.6%	39.38	0.000
	Female	9067	41.08%	42.7%	38.4%		
HCV at the start of HD	Negative	13646	61.83%	96.7%	97.5%	10.94	0.001
	Positive	8424	38.17%	3.3%	2.5%		
HBV at start of HD	Negative	21398	96.99%	96.7%	97.5%	10.94	0.001
	Positive	665	3%	3.3%	2.5%		
Blood Transfusion	No	8591	38.93%	40.7%	36%	48.28	0.000
	Yes	13474	61.07%	59.3%	64%		
Surgery	No	13856	62.8%	64.5%	60%	45.5	0.000
	Yes	820	37.2%	35.5%	40%		
Isolation Procedure	No	3572	19.6%	20.3%	18.6%	7.48	0.000
	Yes	14608	80.4%	79.7%	81.4%		
Infection Control	No	2694	14.8%	14.7%	15.1%	38.35	0.000
	Yes	15218	83.7%	84.1%	82.7%		
Switching Dialysis	Partial	268	1.47%	1.8%	2.2%	10.95	0.001
	No	14043	65.6%	66.5%	64.2%		
Family history of HCV	Negative	16960	82.77%	78.6%	74.7%	562	0.000
	Positive	3531	17.23%	12.4%	25.3%		
Family history of HBV	Negative	3825	89.46%	98.7%	89.1%	2.29	0.13
	Positive	60	1.5%	1.3%	1.9%		
Bilharziasis	No	17458	81.24%	83.6%	77.3%	131.4	0.000
	Yes	4031	18.76%	16.4%	22.7%		
Schistosoma Mansoni	No	14719	92%	92.8%	90.7%	21.4	0.000
	Yes	1268	7.9%	7.8%	9.3%		
Schistosoma hematobium	No	14135	88.4%	92.2%	86.9%	19.05	0.000
	Yes	1851	11.6%	10.8%	13.1%		

Table 2: Multivariate analysis of risk factors

	B	S.E.	Sig.	Odds ratio	95% C.I. for Odds Ratio	
					Lower	Upper
Age Group (Years)			.299			
Duration Free HCV Groups (Years)			.163			
sex	-.039	.080	.621	.961	.822	1.124
Blood Transfusion	.986	.104	.000	2.681	2.185	3.291
Surgery	.435	.080	.000	1.545	1.321	1.807
Isolation Procedures	.018	.099	.859	1.018	.838	1.236
Infection Control	-.249	.093	.007	.779	.649	.935
Switching Dialysis	.432	.080	.000	1.541	1.317	1.802
Bilharziasis	.539	.107	.000	1.715	1.390	2.115

Figure 4: Relative risk of studied factors for HCV seroconversion

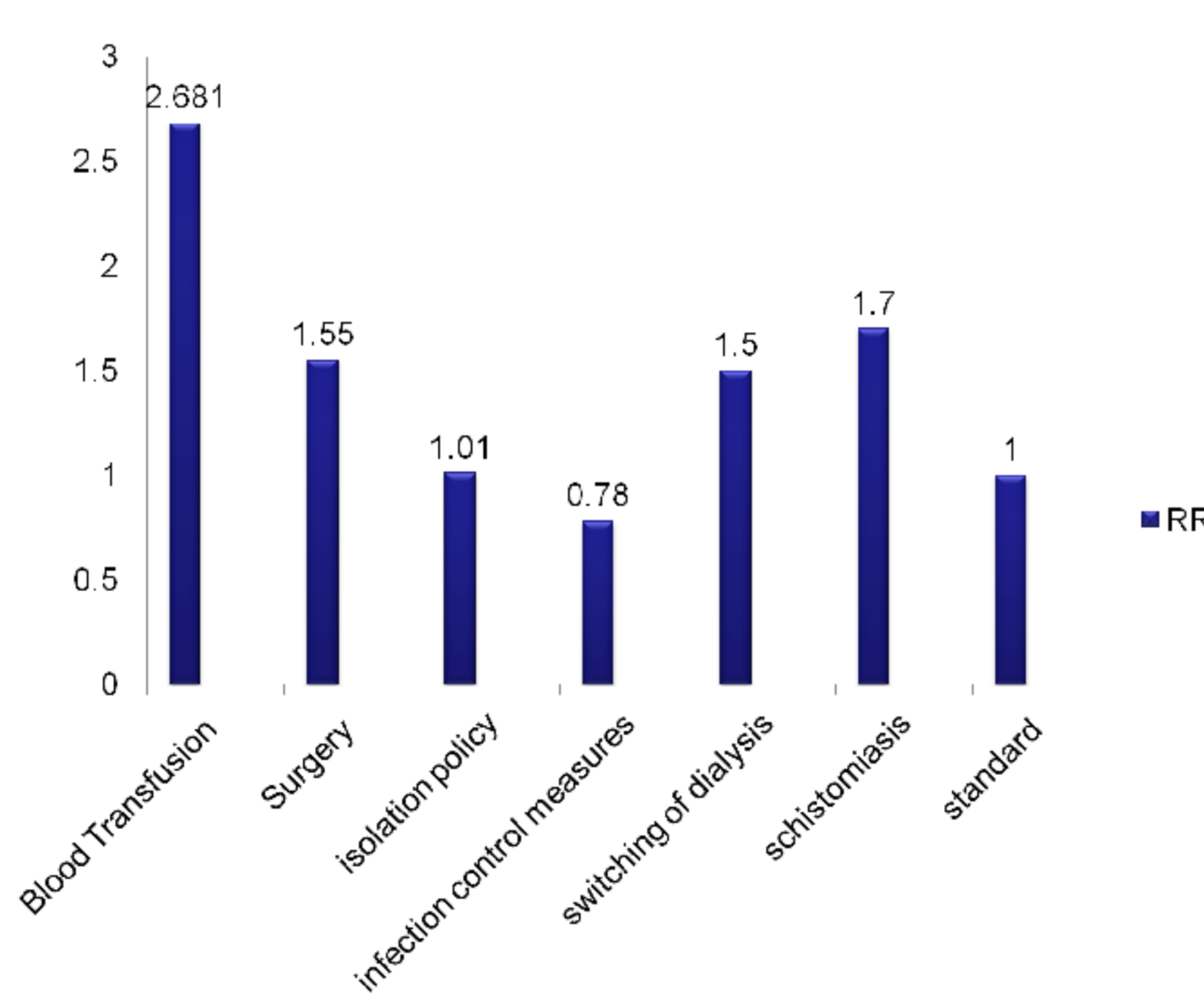
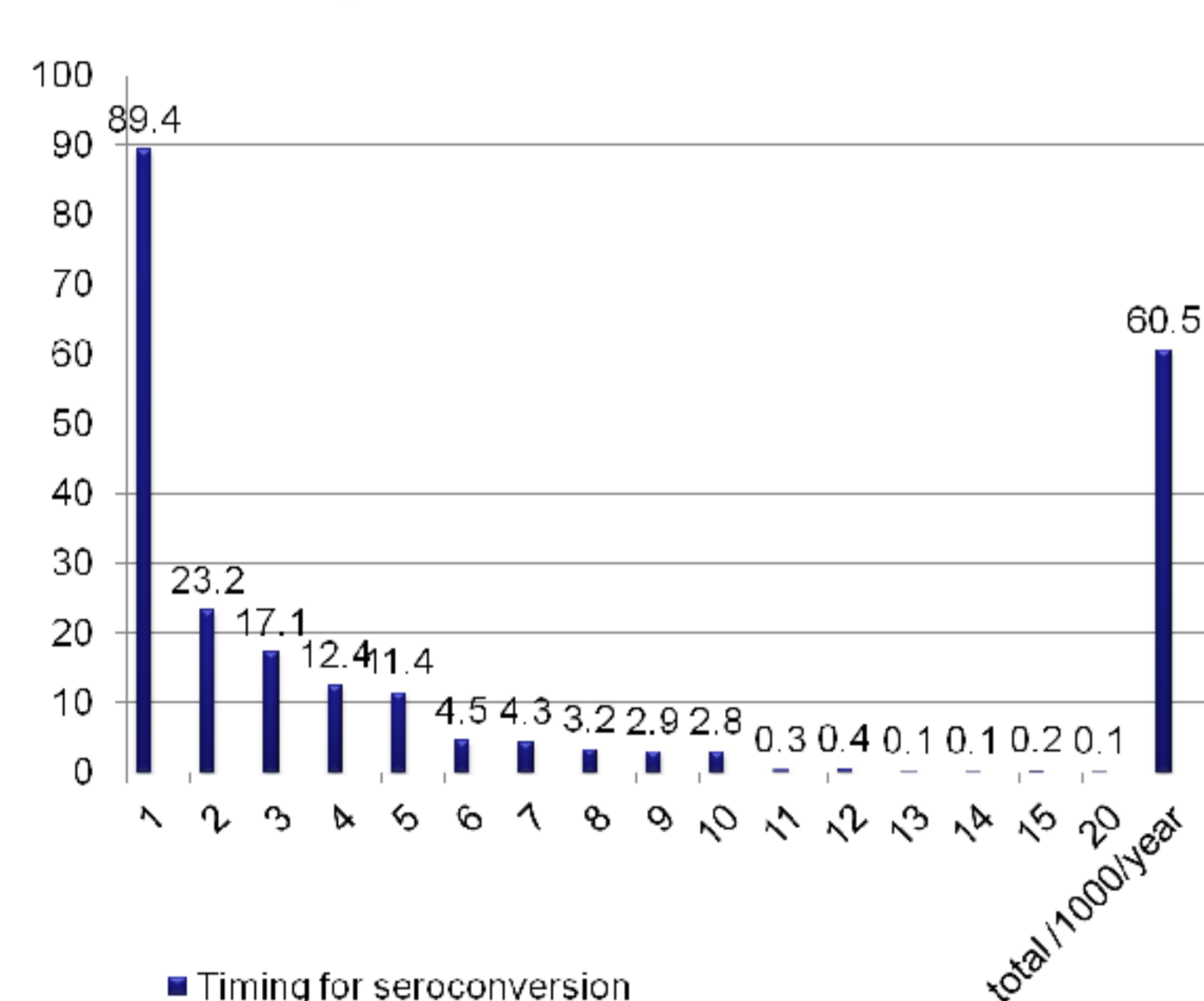


Figure 3: Timing of serroconversion



CONCLUSIONS

The prevalence of HCV infection in HD patients in Egypt is 50.7%, 38.1% of patients has positive HCV antibodies at start of HD, a cumulative serroconversion rate 20.4%. Incidence Serroconversion per 1000 person year 60.5. The most significant risk factors of serroconversion were blood transfusion, surgery, switching between HD units, infection control measures and schistosomiasis.

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