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Galyna Kutsyna
Shevchenko street 26/20
Kremennaya city
Lugansk Region
Ukraine 92900
E-mail: kutsyna@list.ru

Which Conditions are Indicators for HIV Testing across Europe? Results from the HIDES 2 study

G Kutsyna[1], A Mocroft[2], V Hadziosmanovic[3], M Rayment[4], A Vassilenko[5], N Chkhartishvili[6], VM Mitsura[7], C Pedersen[8], J Anderson[9], J Begovac[10], UB Dragsted[11], B Bertisch[12], A Grzeszczuk[13], J Minton[14], C Necsoi[15], M Kitchen[16], F Ajana[17], A Sokhan[18], L Comi[19], P Farazmand[20], D Pesut[21], N Clumeck[15], J Gatell[22], B Gazzard[4], AA Monforte[19], J Rockstroh[23], Y Yazdanpanah[24], A Sullivan[4], K Champenois[24], ML Jakobsen[25], D Raben[25], JD Lundgren[25]

[1]Luhansk AIDS Center, Luhansk, Ukraine, [2]University College London, London, United Kingdom, [3]Clinical Center University of Sarajevo, Sarajevo, Bosnia and Herzegovina, [4]Chelsea and Westminster NHS Foundation Trust, London, United Kingdom, [5]Belarusian State Medical University, Minsk, Belarus, [6]Infectious Diseases, AIDS and Clinical Immunology Research Center, Tiblisi, Georgia, [7]Gomel State Medical University, Gomel, Belarus, [8]Odense University Hospital, Odense, Denmark, [9]Homerton University Hospital, London, United Kingdom, [10]University Hospital of Infectious Diseases, Zagreb, Croatia, [11]Roskilde Hospital, Roskilde, Denmark, [12]Kantonsspital, St. Gallen, Switzerland, [13]Medical University of Bialystok, Bialystok, Poland, [14]St. James University Hospital, Leeds, United Kingdom, [15]Saint-Pierre University Hospital, Brussels, Belgium, [16]Dept of Dermatology and Venerology, Innsbruck, Austria, [17]Centre Hospitalier de Tourcoing, Tourcoing, France, [18]Kharkov State Medical Hospital, Kharkov, Ukraine, [19]San Paolo Hospital, Milan, Italy, [20]Huddersfield Royal Infirmary, Huddersfield, United Kingdom, [21]Clinical Center of Serbia, Belgrade, Serbia, [22]Hospital Clinic de Barcelona, Barcelona, Spain, [23]University of Bonn, Bonn, Germany, [24]IAME, Inserm UMR 1137; hôpital Bichât - Claude Bernard, Paris, France, [25]Rigshospitalet, Centre for Health and Infectious Disease Research, Copenhagen, Denmark

INTRODUCTION

Around 1 in 3 of the estimated 2.2 million people living with HIV across the European region is unaware of their HIV status[1] and approximately 50% of those diagnosed are late presenters with CD4 count less than 350 cells/µl[2].

Client-initiated testing strategies have not been sufficient to identify people with HIV early enough to reduce the number of people presenting late for care and there is need for provider-initiated evidence based testing strategies such as indicator condition guided HIV testing[3,4].

OBJECTIVE

It is cost-effective to perform an HIV test in people with a specific indicator condition (IC) that has an HIV prevalence exceeding 0.1%[5]. Our aim was to determine the HIV prevalence for 14 different conditions across 42 clinics in 20 European countries, grouped into 4 regions (**table 2**).

METHODS

Individuals aged 18-65 presenting with one of 14 conditions (**table 1**) between January 2012 and June 2014 were included. Logistic regression assessed factors associated with testing HIV+.

RESULTS

There were 9471 persons; 500 (5%) from South, 942 (10%) from Central, 2297 (24%) from North and 5732 (61%) from East. Approximately half were male (n=5119, 54.1%) with median age 37 years (IQR 29-49)**(table 3)**. Of these 235 persons tested HIV+ (2.5%[95%CI 2.2–2.8]); HIV prevalence varied according to the presenting IC (**figure 1**). The median presenting CD4 count (n=235), was 206 cells/mm^3 (IQR 74–407 cells/mm^3). The odds of being a late presenter was higher in sexual orientation other than homosexual, and in persons tested in Eastern Europe compared to South, North and Central combined (**table 4**).

CONCLUSIONS

Cost effectiveness was established for HIV testing at presentation in the 9 conditions in which an HIV prevalence of >0.1% was demonstrated. For the remaining conditions relatively low numbers of patients were tested and there were few events. As a consequence we cannot conclude that HIV prevalence is less than 0.1% in these conditions until enrolment targets are met. As infectious mononucleosis-like presentation can mimic acute HIV sero-conversion and has the highest positivity rate, this IC in particular affords opportunities for earlier diagnosis. These ICs should be adopted into HIV testing and IC specialty guidelines. Further work is required to expand this list and support implementation of IC driven HIV testing.

Table 1

Indicator Conditions tested

Malignant lymphoma (irrespective of type)	Unexplained leukocytopenia or thrombocytopenia lasting at least 4 weeks
Cervical dysplasia/cancer (CIN II and above)	Seborrheic dermatitis/exanthema
Anal dysplasia/cancer	Pneumonia (admitted to hospital at least 24h)
Hepatitis B (acute or chronic - and irrespective of time of diagnosis relative to time of survey)	Unexplained lymphadenopathy
Hepatitis C (acute or chronic - and irrespective of time of diagnosis relative to time of survey)	Peripheral neuropathy of unknown cause (diagnosed by neurologist)
Hepatitis B+C (acute or chronic - and irrespective of time of diagnosis relative to time of survey)	Primary lung cancer
Ongoing mononucleosis-like illness	Severe or recalcitrant psoriasis (newly diagnosed)

Table 2

Regions of Europe

South	Central	North	East
Greece	Belgium	Denmark	Georgia
Italy	France	UK	Belarus
Spain	Germany	Netherlands	Serbia
Israel	Switzerland		Poland
	Austria		Romania
			Ukraine
			Croatia
			Bosnia/Herzegovina

Table 3

Characteristics of participants

		All		South		Central		North		East		P
		N	%	N	%	N	%	N	%	N	%	
All		9471	100	500	5.3	942	10.0	2297	24.3	5732	60.5	
Gender	Male	5119	54.1	266	53.2	558	59.2	1166	50.8	3129	54.6	<0.0001
	Female	4352	45.9	234	46.8	384	40.8	1131	49.2	2603	45.4	
Ethnicity	Caucasian	8200	86.6	405	81.0	634	67.3	1464	63.7	5597	99.4	<0.0001
	Asian	296	3.1	12	2.4	18	1.9	254	11.1	12	0.2	
	African	262	2.8	7	1.4	82	8.7	172	7.5	1	0.0	
	Unknown	713	7.5	76	15.2	208	22..1	407	17.7	22	0.4	
Previous HIV Test	Yes	1373	14.5	79	15.8	290	30.8	488	21.3	516	9.0	<0.0001
	No	5991	63.3	352	70.4	283	30.0	807	55.1	4549	79.4	
	Unknown	2107	22.3	69	13.8	369	39.2	1002	43.6	667	11.6	
Setting	Outpatient	4500	47.5	180	36.0	430	45.7	1811	78.8	2079	36.3	<0.0001
	Inpatient	3564	37.6	232	46.4	232	24.6	414	18.0	2686	46.9	
	Prim. Care	270	2.9	72	14.4	134	14.2	64	2.8	0	0	
	Unknown	1137	12.0	16	3.2	146	15.5	8	0.4	967	16.9	
		Median	IQR	Median	IQR	Median	IQR	Median	IQR	Median	IQR	
Age	Years	37	29-49	41	30-52	42	32-52	41	31-54	35	27-46	<0.0001
Date	MM/YY	5/13	1/13-11/13	4/13	10/12-10/13	7/13	2/13-1/14	7/13	2/13-12/13	4/13	12/12-10/13	<0.0001

Figure 1

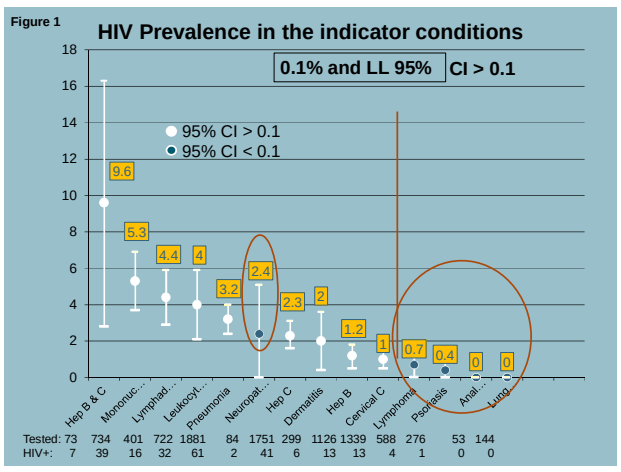

Table 4

Odds of being a late presenter

		Univariate			Multivariate		
		OR	95% CI	P	OR	95% CI	P
Age	Per 10 year older	1.68	1.19 – 2.37	0.0031	1.76	1.18 – 2.61	0.0055
Setting	Out patients	1.00	-	-	1.00	-	-
	Other	2.98	1.65 – 5.40	0.0003	3.36	1.62 – 6.97	0.0012
Symptoms*	Yes	1.00	-	-	1.00	-	-
	No	0.83	0.44 – 1.55	0.55	0.27	0.11 – 0.67	0.0045
Sexual Orientation	Homo	1.00	-	-	1.00	-	-
	Other	2.40	1.30 – 4.43	0.0050	0.42	0.16 – 1.10	0.077
Previous HCV test	No	1.00	-	-	1.00	-	-
	Yes/unknown	1.32	0.70 – 2.47	0.39	1.55	0.64 – 3.78	0.33
Previous HIV Test	Yes	1.00	-	-	1.00	-	-
	No	3.52	1.79 – 6.91	0.0003	2.34	1.01 – 5.40	0.047
ID	Hepatitis C	0.80	0.29 – 2.20	0.67	1.30	0.36 – 4.73	0.69
	Mononucleosis	0.14	0.05 – 0.38	0.0001	0.38	0.11 – 1.25	0.11
	Pneumonia	1.00	-	-	1.00	-	-
	Lymphadenopathy	0.42	0.15 – 1.16	0.094	0.76	0.24 – 2.45	0.64
	All others	0.54	0.23 – 1.31	0.17	0.64	0.24 – 1.73	0.38
Region	Non-East	1.00	-	-	1.00	-	-
	East	2.16	1.16 – 4.03	0.016	1.47	0.56 – 3.82	0.43

HIDES2 Study Group

The HIV Indicator Diseases Across Europe Study Group. **Advisory Group:** N Clumeck, Saint-Pierre University Hospital, Brussels, Belgium, J Gatell, Hospital Clínic de Barcelona, Barcelona, Spain, B Gazzard, Chelsea and Westminster Hospital, London, England, J Lundgren, University of Copenhagen and Rigshospitalet, Copenhagen, Denmark, A d'Arminio Monforte, Unit of Infectious Diseases, San Paolo Hospital, University of Milan, Milan, Italy, J Rockstroh, Department of Medicine, University of Bonn, Germany, A Mocroft, University College London Medical School, UK, Y Yazdanpanah, Hopital Bichat Claude Bernard, Paris, France. **Centres**: **Austria:** R Zangerle, M Kitchen, University Hospital Innsbruck, Department of Dermatology and Venereology, Innsbruck. **Belarus:** A Vassilenko, Minsk Municipal Infectious Diseases Hospital, Minsk, VM Mitsura, Gomel State Medical University, Gomel. **Belgium:** C Necsoi, AF Gennotte, Saint-Pierre University Hospital, Brussels. **Bosnia:** V Hadziosmanovic, Clinical Center, University of Sarajevo, Infectious Diseases Clinic, Sarajevo. **Croatia:** J Begovac, University Hospital of Infectious Diseases, Zagreb. **Denmark:** C Pedersen, L Redder, Odense Universitetshospital, UB Dragsted, Roskilde Hospital. **France:** F Caby, Hôpital de la Pitié-Salpêtriére, Paris, E Bouvet, Hôpital Bichat Claude Bernard, Paris, MA Khuong, Hôpital Delafontaine, St. Denis, Centre Hospitalier René Dubois, Pontoise, S Caldato, P Morlat, Hôpital Saint-André, Bordeaux, D Coban, CHU de Clermont-Ferrand, Clermont-Ferrand, C Arvieux, Hôpital Pontchaillou, Rennes, F Ajana, Centre Hospitalier de Tourcoing, Tourcoing, A Cabié, CHU Fort-de-France, Fort-de-France, Matinique. **Georgia:** N Chkhartishvili, Infectious Diseases, AIDS and Clinical Immunology Research Center, Tbilisi, Georgia. **Germany:** J Rockstroh, Immunologische Ambulanz, Department of Medicine, University of Bonn, S Gerdes, Universität-Hautklinik Kiel, Kiel **Greece:** H Sambatakou, Ippokration General Hospital, Athens. **Israel:** Z M Sthoeger, D Elbirt, Ben Ari Institute of Clinical Immunology, Rehovot. **Italy:** A d'Arminio Monforte, L Comi, T Bini, Unit of Infectious Diseases, San Paolo Hospital, Milan, BM Celesia, M Gussio, Unit of Infectious Diseases, University of Catania, Catania, Sicily. **Netherlands:** K Brinkman, Onze Lieve Vrouwe Gasthuis, Internal Medicine, Amsterdam. **Poland:** A Grzeszczuk, Medical University of Bialystok, Department of Infectious Diseases and Hepatology, Bialystok. **Romania:** EC Rosca, University of Medicine and Pharmacy Victor Babes, Clinical Emergency County Hospital, Timisoara. **Serbia**: D Pesut, Clinical Centre of Serbia, Teaching Hospital of Lung Diseases, Belgrade. **Spain:** MA Goenaga Sánchez, Hospital Donostia, San Sebastian, V P Estrada, Hospital Universitario San Carlos, Madrid, E Ortega Gonzalez, Consorcio Hospital General Univ de Valencia, Valencia, A Ocampo, Complexo Xeral Cies de Vigo, Vigo, M Masiá, Hospital Universitario de Elche, Elche, C Agustí, CEEISCAT, Badalona. **Sweden:** A Sönnerborg, Department of Infectious Diseases, Karolinska University Hospital, Stockholm. **Switzerland:** P Vernazza, B Bertisch, Kantonsspital, St Gallen. **United Kingdom:** A Sullivan, M Rayment, C Rae, Chelsea and Westminster Hospital, London, S Morris, Western General Hospital, Edinburgh, J Anderson, Homerton University Hospital, London, A Palfreeman, Leicester, J Minton, J Calderwood, St James's University Hospital, Leeds, p Farazmand, Huddersfield Royal Infirmary, West Yorkshire, ELC Ong, The Newcastle upon Tyne Hospital, Newcastle, D Mummery, North End Medical Centre, London. **Ukraine**: G Kutsyna, Luhansk AIDS Center, Luhansk, A Kuznetsova, Kharkov Regional Clinic of Infectious Diseases, Kharkov. **Coordinating Centre Staff**: A Sullivan, Chelsea and Westminster Hospital, London, UK, K Champenois, Inserm U738, ATIP/AVENIR Team, Paris, France, P Lopez, D Raben, M L Jakobsen, R S Brandt, CHIP, Rigshospitalet, Copenhagen, Denmark. **Statistical Analysis**: A Mocroft, University College London, UK.

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