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Médecine et maladies infectieuses 48 (2018) 122–129

Original article

DEPIVIH 2: Use of three HIV testing methods in French primary care settings – ELISA laboratory screening versus two rapid point-of-care HIV tests☆

DEPIVIH 2 : étude observationnelle comparative de trois méthodes de dépistage de l'infection au VIH par des médecins généralistes en France

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Received 20 September 2016; received in revised form 15 January 2017; accepted 14 November 2017
Available online 18 December 2017

Abstract

Objective. – The primary endpoint was to evaluate the use of HIV testing methods by French primary care providers: Elisa laboratory screening, instant result HIV diagnostic test and rapid result HIV diagnostic test. The secondary endpoints were the population screening rate of unknown HIV status consulting during the study period, reasons for screening and for choosing the specific screening method, the investigators' satisfaction with the rapid diagnostic test (RDT) and problems encountered.

Patients and methods. – National prospective interventional study with French family physicians (FP) from December 2013 to December 2014. FPs enrolled all consenting adults consulting for an HIV screening test during a 6-month period: the choice was an Elisa laboratory test or one of the two RDTs.

Results. – During the study period, 43 FPs included 981 patients. HIV screening was performed for the first time for 31.6% of patients; 767 (78.2%) Elisa laboratory test prescriptions and 214 (21.8%) RDTs were performed, leading to a screening rate of 1.3%. For 120 (15.7%) of the Elisa laboratory tests, the result was not reported and six RDTs were not valid. Nine patients were diagnosed as HIV-infected (0.9%): five with Elisa laboratory test and four with RDT. Almost 90% of FPs were willing to keep on using RDTs in their daily practice.

☆ The DEPIVIH 2 study has been presented at three congresses: 15th Congress of the European AIDS Clinical Society, October 2015, Barcelona – poster, 16th Congress of the French AIDS society (French acronym SFLS), October 2015, Nantes – poster, 15th Congress of the French National College of Teachers in General Practice, November 2015, Dijon – oral communication.

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https://doi.org/10.1016/j.medmal.2017.11.005

Conclusion. – In general practice, RDTs may be an important additional tool to traditional HIV screening. They could account for one in five tests prescribed in this context.

Keywords: Screening; HIV RDT; HIV infection

Résumé

Objectifs. – Évaluer l'utilisation de trois méthodes de dépistage du VIH en soins primaires : sérologie VIH au laboratoire, test rapide d'orientation diagnostique (TROD) à réponse immédiate et TROD à réponse rapide. Les objectifs secondaires étaient le taux de dépistage de la population vue en consultation, les motifs de réalisation du test de dépistage, les motifs du choix de la méthode utilisée, la satisfaction du médecin vis-à-vis du test et les éventuels problèmes rencontrés.

Patients et méthodes. – Étude observationnelle prospective et multicentrique sur l'utilisation des TROD et de la sérologie du VIH en pratique courante de dépistage par des médecins généralistes. Les médecins devaient inclure pendant 6 mois des adultes à qui ils réalisaient un test de dépistage (le choix étant entre l'un des TROD et une sérologie).

Résultats. – Quarante-trois investigateurs ont inclus 981 patients (décembre 2013–décembre 2014). Le dépistage n'avait jamais été fait pour 31,6 % des patients. Ont été réalisés 767 sérologies (78,2 %) et 214 TROD (21,8 %). La proportion de patients ayant été dépistés est de 1,3 % ; 120 sérologies (15,7 %) n'ont pas été récupérées et 6 TROD étaient invalides. Neuf patients ont été découverts séropositifs (0,9 %), cinq par sérologie et quatre par TROD. Environ 90 % des médecins ont déclaré souhaiter continuer à utiliser les TROD en dépistage dans leur pratique quotidienne.

Conclusion. – En médecine générale, les TROD peuvent être un outil complémentaire au dépistage classique du VIH, pouvant représenter jusqu'à 1 test de dépistage sur 5 réalisés dans ce contexte.

Mots clés : Dépistage ; TROD VIH ; Infection par le VIH

1. Introduction

The 2009 French guidelines on human immunodeficiency virus (HIV) screening recommended routine screening for all individuals consulting at a healthcare facility and repeated targeted screening for at-risk populations [1–3]. However, over the next two years, only a 5% increase in the number of screening tests performed was observed and the figure then stabilized [4]. A retrospective study performed in 2012 reported a poor detection of clinical signs of early HIV infection and of at-risk groups [5]. Several groups of experts recommended "regular targeted screening". They argued that such screening should be suggested as often as possible to patients [4,6].

The 2009 guidelines recommended using another tool to complement traditional screening: the HIV rapid diagnostic test (RDT) [7]. The HIV RDT simultaneously allows for pretesting advice, actual testing and instant result delivery, and customized counselling. The number of tests that are not performed or whose results are not collected by patients and for which physicians do not have any feedback is thus reduced. Since the implementation of these testing methods in France, several studies have evaluated the use of RDTs in emergency departments [8,9], free and anonymous screening centers (French acronym CDAG) [10], community settings and awareness activity [11,12]. Two exploratory studies conducted in metropolitan France in primary care settings identified several limitations to these tests such as technical difficulties for blood sampling and time required to perform the test for some of the RDTs. They, however, concluded to the good acceptability of this type of screening method [13,14]. A total of 150,000 RDTs have been performed between 2012 and 2014 [15].

However in 2014, RDTs were still not reimbursed when used in primary care settings and the traditional screening method were still based on ELISA serology performed by medical laboratories.

No study assessed the utility of RDTs in the current HIV screening process in French primary care settings. We performed a study to compare three screening methods used in primary care settings: two RDTs versus ELISA serology.

2. Material and method

The DEPIVIH 2 study was initiated and coordinated by the Study and Research Group in Community and Hospital Settings (French acronym GERVIH).

This observational, prospective and multicenter study was performed in five French regions in primary care settings and aimed to compare the use of three HIV screening methods:

- prescription of HIV serology performed by a medical laboratory;
- use of a rapid result RDT (within 30 minutes): VIKIA® BioMérieux;
- use of an instant result RDT (< 3 minutes): INSTI® Nephrotek.

French family physicians working in private practices or employed in healthcare facilities were invited to participate in the study. Each of the 43 physician investigators who had been trained beforehand to perform and interpret RDTs included at least one patient.

The main objective of the study was to measure the relative proportions of use of these three HIV screening methods.

Secondary objectives were to measure:

- the screening rate in the population consulting for medical advice – defined as the number of screened patients as compared with the number of patients with no known HIV-infected status and consulting during the study period;
- reasons for screening;
- reasons for choosing the specific screening method;
- physician's satisfaction of the test;
- potential problems encountered.

Inclusion criteria were:

- age ≥ 18 years;
- no known HIV-infected status;
- agreeing to consult the physician investigator during the study period;
- either asking for a screening test or presenting with clinical characteristics leading the physician investigator to ask for a HIV screening test;
- give oral consent to the study.

Participants could choose which screening methods (serology or one of the two RDTs) they preferred.

A poster was displayed in the waiting room at the start of the study. Each physician investigator could include patients for a total period of six months or until they reached a total of 50 patients.

Physician investigators had to explain the study objectives to patients, as well as the limitations and benefits of all three screening methods.

For each RDT performed, patients received an official report including their name, the physician's name, the date, results and reference of the test. Physician investigators kept a copy to ensure traceability of the test.

In case of a positive test, physician investigators informed patients of their HIV-infected status and confirmed the result as per applicable guidelines. Patients were at that point automatically included into the specialized care pathway. For invalid tests, physician investigators had to collect another sample using laboratory serological test.

Each physician investigator had to document all difficulties encountered in real time. A self-administered questionnaire filled in at the end of the study collected personal and professional information as well as the physician investigator's opinion of the three screening methods.

The statistical analysis was performed using the SAS software version 9.1 (North Carolina, USA) (with the help of the firm CEMKA).

Ordinal and qualitative variables were reported as numbers and frequency of each modality. Quantitative variables were reported as the number of responses, mean, standard deviation, minimum and maximum values and median of data provided. We used Pearson's chi-square test and Yates/Fischer's test to compare qualitative variables. We compared quantitative variables with Student's *t* test and non-parametric tests.

The DEPIVIH 2 study was approved by the French Data Protection Authority (French acronym CNIL) in May 2013 (DR-2013-250 ruling) and by the Advisory Committee on Information Processing in Material Research in the Field of Health (French acronym CCTIRS) in March 2013 (File 12762 A). The institutional review board (French acronym CPP) appealed to reply that the DEPIVIH 2 study was not within its field of competence.

3. Results

The study was performed between December 2013 and December 2014.

3.1. Characteristics of physician investigators

Table 1 details the characteristics of all 43 physician investigators. Mean age of the 43 participating physician investigators was 46.6 years; 48.8% were women. They mainly practiced in urban areas and were paid strictly according to social security fees (i.e., sector 1). Slightly less than half of physician investigators had a joint hospital activity. Each physician investigator saw on average 318.5 patients per month, including 18 (5.6%) HIV-infected patients.

These physicians included 987 individuals. A total of 981 charts were analyzed following exclusion of those, which could not be used.

Nine physicians reached the maximum of inclusions allowed (i.e. 50 patients). The other 34 physician investigators included less than 50 patients within six months.

3.2. Characteristics of patients and tests performed

Table 2 details the characteristics of patients and tests performed.

Mean age of patients was 34.5 years and 54.5% were women. More than two-thirds of patients (68.4%) had already obtained a negative HIV test result and for 38.2% of them the most recent test had been performed in the previous 12 months. This study thus provided the opportunity to perform a first screening test for almost a third of patients (31.6%). No significant differences were observed in terms of sex, age and prior screening tests between patients tested with RDTs and serological tests.

A total of 981 HIV screening tests were performed during the study; 767 (78.2%) were done using serology methods and 214 (21.8%) using RDTs (181 INSTI® tests and 33 VIKIA® tests).

Each physician investigator performed 23 HIV screening tests on average (5 RDTs and 18 serological tests). They reported a mean number of 1800 adult patients with an unknown HIV-infected status who consulted during the inclusion period. As compared with all patients with an unknown HIV-infected status and who consulted during the inclusion period, the proportion of patients who were screened for HIV was 1.3% (23/1800).

Table 1
Characteristics of physician investigators.
Caractéristiques des médecins investigateurs.

	$n = 43$
Sex	
Female	21 (48.8%)
Male	22 (51.2%)
Age (years)	
Number (response rate)	40 (93%)
Mean (standard deviation)	46.2 (10.1)
Median/min/max	47/28/64
Years of practice	
Not specified	7
1980–1999	15 (42%)
2000–2009	10 (28%)
2010–2013	11 (30.6%)
Area of practice	
Urban area	38 (88.4%)
Peri-urban area	4 (9.3%)
Rural area	1 (2.3%)
Sector of practice	
Not specified	3
Sector 1 (i.e., paid strictly according to social security fees)	40 (93%)
Part-time hospital activity	
Not specified	4
Yes	17 (43.6%)
No	22 (56.4%)
Number of adult patients seen over the past 12 months	
Number (response rate)	36 (83.7%)
Mean (standard deviation)	318.5 (125.7)
Number of HIV-infected adult patients seen over the past 12 months	
Number (response rate)	37 (86.0%)
Mean (standard deviation)	18.0 (38.2)
Number of patients who had a screening test performed during the DEPIVIH2 study	
Number (response rate)	43 (100.0%)
Mean (standard deviation)	22.8 (16.9)
Number of patients who had a serological test performed during the DEPIVIH2 study	
Number (response rate)	43 (100.0%)
Mean (standard deviation)	17.8 (16.6)
Number of patients who had a RDT performed during the DEPIVIH2 study	
Number (response rate)	43 (100.0%)
Mean (standard deviation)	5.0 (5.5)

Screening was performed as part of routine care in 71.8% of cases, because of a risk factor for HIV infection in 24.9% of cases and because of clinical signs of HIV infection in 3.3% of cases. Serological tests were performed as part of routine care in 75.0% of cases, because of a risk factor in 21.4% and because of clinical signs in 3.6% of cases. RDTs were respectively performed as part of routine care in 60.3% of cases, because of risk factors in 37.7% of cases and because of clinical signs in 2.0% of cases.

A total of 54 RDTs were performed during the window period of three months following risk behavior: one for a suspicion of primary infection and 53 because of risk behaviors in the previous three months. It must be reminded that results of HIV RDTs are only reliable if the test is performed at least three months after exposure.

The main reason for choosing the serological test (for 85.9% of serological tests) was the possibility to include HIV screening with other blood tests.

Reasons for choosing a RDT were (in descending order):

- the opportunity to use this diagnostic test (68.4%);
- the rapid time to results (43.4%);
- being sure to have the results back (15.1%).

Approximately half (53.7%) of the tests were chosen by physician investigators, a third (32.7%) following a discussion between the physician and the patient, and 13.6% by patients only. The method choice significantly depended on the person making the choice: the prescription of serology was more often decided by physicians while RDTs were more often chosen by patients or resulted from a discussion between physicians and patients.

3.3. Characteristics of positive tests

Of the 981 tests performed, nine were positive (i.e., 0.9% of 981 tests), six RDTs were not valid (2 VIKIA® and 4 INSTI®) and results of 120 serological tests prescribed (15.7%) had not been collected by physicians by the end of the study.

Five of the nine positive tests were serological tests and four were RDTs (similar proportion for INSTI® and VIKIA®). This subgroup was made of two women and seven men (mean age of 37 years). The screening test was the first for three of them. Three patients had recently been infected as their last negative test result dated from 2013.

Diagnosed patients belonged to at-risk populations: four men who had sex with men (MSM), four migrants and one MSM migrant. Screening was also targeted according to clinical signs (4/9 patients) and presence of comorbidities (3/9 patients presenting with chronic viral hepatitis B and C). All these patients had a confirmatory biological test performed. They are all managed in a specialized unit.

3.4. Physicians' perceptions of RDTs

Table 3 describes the physicians' perception of the various types of test performed.

Overall, 89.2% of physician investigators declared being satisfied with rapid diagnostic test in routine practice. A total of 94.6% of them declared being satisfied with the time required to perform the INSTI® RDT (reliable negative result after 5 minutes) versus 40% for the VIKIA® RDT (reliable negative result after 30 minutes). Approximately 90% of physician investigators said they wanted to keep on using RDTs for screening purposes in community settings; 84.8% preferred the instant result RDT.

Among the 43 physician investigators, 60% thought that results of the RDT were as difficult to interpret as those of serological tests, while 22.9% thought they were easier to interpret and 17.1% more difficult. The main difficulties of RDTs mentioned by physician investigators were technical difficulties to

Table 2
Characteristics of patients and screening tests.
Données sur la population des patients et les tests de dépistage.

		RDT 214 (21.8%)			
	Serology767 (78.2%)	VIKIA® 33 (3.4%)	INSTI® 181 (18.4%)	Total981 (100%)	*P* value
Sex					0.0224[b]
Female	433 (56.5%)	102 (47.7%)		535 (54.5%)	
Male	334 (43.5%)	112 (52.3%)		446 (45.5%)	
Age					
Mean (standard deviation)	34.8 (12.0)	33.7 (11.9)		34.5 (12.0)	0.2431[a]
Has the patient already had a HIV screening test performed?					0.2003[b]
Not specified	26	–		26	
Yes	499 (67.3%)	154 (72.0%)		653 (68.4%)	
No	242 (32.7%)	60 (28.0%)		302 (31.6%)	
Last screening test performed					0.2
≤ 1 year (2013-2014)	172 (36.7%)	63 (42.9%)		237 (38.2%)	
2–5 years (2008–012)	237 (50.5%)	67 (45.6%)		306 (49.4%)	
> 5 years (before 2008)	60 (12.8%)	17 (11.8%)		77 (12.6%)	
Not indicated	30	7		37	
Reasons for screening					< 0.0001[b]
Not specified	24	10		34	
Routine testing	557 (75%)	123 (60.3%)		680 (71.8%)	
Risk factors	159 (21.4%)	77 (37.7%)		236 (24.9%)	
Clinical signs indicative of HIV infection	27 (3.6%)	4 (2.0%)		31 (3.3%)	
Who chose the type of test performed?					< 0.0001[b]
Not specified	11	1		12	
Physician	469 (62%)	51 (23.9%)		522 (53.7%)	
Patient	71 (9.4%)	61 (28.6%)		132 (13.6%)	
Physician and patient	216 (28.6%)	101 (47.5%)		317 (32.7%)	
Reasons for choosing this type of test					
Risk behavior in the past 3 months	145 (19.0%)	53 (25.0%)		198 (20.3%)	0.0538[b]
Symptoms indicative of a HIV primary infection	15 (2.0%)	1 (0.5%)		16 (1.6%)	0.2175[c]
Clinical signs indicative of HIV infection	7 (0.9%)	5 (2.4%)		12 (1.2%)	0.1483[c]
Time to results	4 (0.5%)	92 (43.4%)		96 (9.8%)	< 0.0001[b]
Fear of blood draw	2 (0.3%)	25 (11.8%)		27 (2.8%)	< 0.0001[b]
Opportunity to perform the RDT	20 (2.6%)	145 (68.4%)		165 (16.9%)	< 0.0001[b]
With the RDT, I am sure I will get the result	4 (0.5%)	32 (15.1%)		36 (3.7%)	< 0.0001[b]
Opportunity to group the HIV screening with other blood tests	656 (85.9%)	6 (2.8%)		662 (67.8%)	< 0.0001[b]
Lack of time to perform the RDT during the consultation	45 (5.9%)	–		45 (4.6%)	0.0003[b]
Other	137 (17.9%)	34 (16.0%)		171 (17.5%)	0.5209[b]
Test result					
Positive	5 (0.7%)	4 (1.9%)		9 (0.9%)	
Negative	641 (83.6%)	203 (94.8%)		831 (86%)	
Invalid	–	6 (2.8%)		6 (0.6%)	
Results not collected	120 (15.7%)	0		120 (12.8%)	

[a] Student's *t* test.
[b] Chi-square test.
[c] Fisher's exact test.

perform the test for 30.2% of physician investigators and time required to perform the test for 9.3%.

4. Discussion

Our study is an original work performed in primary care settings and aiming at assessing the choice of HIV screening methods made by French family physicians.

In the event of HIV RDT availability, our findings reveal that serological tests would remain the most frequently used screening method in primary care settings. However, one in five screening tests would be a RDT. RDTs would therefore be an additional option for screening and the instant result (within 3 minutes) of the INSTI® test would increasingly lead physicians to choose this test. Our findings are consistent with those reported by Demorat who randomized patients into a RDT group

Table 3
Family physicians' satisfaction with the use of RDT.
Ressenti des médecins vis-à-vis des TROD en fin d'étude.

Study population: physicians with at least one patient included	43 (100.0%)
Are you satisfied with the time required to perform the INSTI® RDT?	
Number (response rate)	37 (86.6%)
Not specified	6
Satisfied/very satisfied	35 (94.6%)
Not really satisfied	2 (5.4%)
Are you satisfied with the time required to perform the VIKIA® RDT?	
Number (response rate)	31 (72%)
Not specified	13
Satisfied/very satisfied	12 (40%)
Not really satisfied/not at all satisfied	19 (60%)
Overall, are you satisfied with the rapid diagnostic test?	
Number (response rate)	33 (86%)
Not specified	6
Satisfied/very satisfied	33 (89.2%)
Not really satisfied	4 (10.8%)
Would you like to keep on using the RDT?	
Number (response rate)	39 (90.6%)
Not specified	4
Yes	34 (87.2%)
No	5 (12.8%)
If yes, would you prefer	
Number (response rate)	31 (100%)
Not specified	1
An instant result RDT	28 (84.8%)
A rapid result RDT	2 (6.1%)
No opinion	3 (9.1%)
As compared with the result description of the traditional screening method, would you say the result description of RDTs is	
Number (response rate)	35 (81.3%)
Not specified	8
More difficult	6 (17.1%)
As difficult	21 (60%)
Less difficult	8 (22.9%)
Was the test appropriate for use in primary care settings?	
Time-consuming	4 (9.3%)
Difficult technical sampling	13 (30.2%)
Lack of preparation in case of a positive result	4 (9.3%)
Study population: patients with an unknown serological HIV status, screened with RDT	*n* = 214 (100%)
Difficulties encountered during the procedure: yes	28 (13.9%)
Difficulties to collect the blood drop	22
Unreadable results	1
Fear of blood/faintness	1
Altered reagent	1
Not specified	3

and a serology group [16]. The author reported that both methods were well accepted, with a higher proportion of RDTs performed. This was mainly due to the short time to result availability.

The screening rate of individuals with an unknown HIV serological status was 1.3%. Each physician investigator performed 23 HIV screening tests on average, including five RDTs. The studies DEPIVIH 1 [13] and DEPITROD [14] assessed the feasibility of HIV screening with RDTs in primary care settings and reported screening rate values of 1.5% and 1.2%, respectively. These figures are similar to our findings. The mean number of RDTs performed by physician investigator in the various studies was quite similar: six in the DEPIVIH 1 study [13], seven in the DEPITROD study [14] and 14 in another study performed in French Guiana [10]. The difference in the number of RDTs performed in French Guiana and metropolitan France may be explained by the higher prevalence of HIV in French Guiana (2013 diagnostic incidence of 9.2/1000 vs 2/1000) and by the preferential use of RDTs for geographical and economic reasons [17]. Besides, the device studied in French Guiana was funded by health authorities and consultations were reimbursed to encourage the use of RDTs.

An English study and a French one demonstrated that training family physicians contributed to significantly increasing the rate of screening tests performed. A three-fold increase was indeed observed in the United Kingdom [18,19]. Our study did not assess prior screening behaviors, but one may assume that training sessions held for the study purposes contributed to encouraging the use of screening tests (23 tests/physician) and to reducing the rate of invalid RDTs (2.8%). Another study reported the lack of benefits of RDTs in very low HIV prevalence areas considering the lack of training and support for family physicians [20].

The screening profile was significantly different depending on the person choosing the type of test to perform. RDTs were most often chosen by patients as well as after consultation with the physician, while serological tests were most often chosen by physicians. The analysis of reasons for screening revealed that patients seemed to favor the instant result component while physicians preferred a less time-consuming method, without any technical difficulties and allowing for a global workup.

The choice of screening test also differed significantly by circumstances of screening. RDTs were most often used for targeted screening based on risk factors while serological tests were prescribed as part of routine screening. These findings suggest that RDTs bring on a different screening opportunity than serological tests.

The analysis of our results revealed that 54 RDTs did not comply with guidelines as they were performed less than three months following risk behaviors. The detailed analysis of questionnaires revealed that these patients had had risk behaviors in the previous months. A regular and repeated testing offer therefore seemed appropriate for them. At Checkpoint Paris – an information and healthcare facility for male homosexuals mainly – RDTs were frequently offered and sometimes less than three months after risk behaviors. The final analysis reported 30 positive results, including 17 primary infections [12,21]. This finding suggests that RDTs may be beneficial in case of risk behaviors even when performed less than three months before risk behaviors.

Compared with the DEPIVIH 1 study where 42% of physicians mentioned the lack of time and technical difficulties as the main obstacles to RDTs, 28% of physicians of the DEPIVIH 2 study had difficulties in collecting the blood drop and only 3% mentioned the time-consuming characteristic of RDTs [13].

This may be explained by the use of an instant result RDT that seems to be appropriate for primary care settings, thus confirming results of a prior study [14]. Besides, we only reported 2.8% of invalid results in our study versus 8% in the DEPIVIH 1 study [13]. This may be explained by better initial training of physician investigators, focused on the actual performance of RDTs.

Physicians would like to keep on using RDTs in their daily practice and preferred instant result RDTs.

The rate of serological testing results retrieved (84.2%) was clearly higher than the one reported in two other studies performed in primary care settings (31.6% and 36% [16,22]). The longer follow-up period implemented in our study probably contributed to this better result. The high number of results that had not been collected by physicians (120 for serological tests, i.e. 15.7%) reinforces the utility of RDTs to reduce the rate of patients lost to follow up and of results never communicated to patients.

The rate of positive tests (0.9%) was particularly high and unexpected in a primary care setting. All patients screened as part of the DEPIVIH2 study belonged to at-risk groups. Consultations where these positive tests were observed took place in areas with a high prevalence of HIV. This proportion is close to that observed in French Guyana in 2012 (1%) [10]. Positive results were obtained with both serological tests and RDTs.

RDTs therefore complement HIV serological testing. They are useful for HIV screening in primary care settings in French areas with a high prevalence of HIV. Yet, serological testing remains the most frequent method because of its advantages (may be performed as part of a global workup, no technical difficulties such as the time-consuming nature of RDTs, longer preparation time for physicians who are not used to inform patients about their HIV-infected status). Information and training campaigns for family physicians on the various modalities of HIV screening could significantly increase the screening rate [18,19]. To increase the rate of screening with RDTs in primary care settings, physicians would need to be trained and the consultation would need to be reimbursed.

5. Conclusion

In primary care settings, RDTs complement the traditional HIV screening method: they account for approximately 20% of HIV screenings and the choice and reasons for using RDTs are different from those related to serological testing. Instant result RDTs (3 minutes) seem to be better appropriate than rapid result RDTs (30 minutes). The process used in this study led to a 1.3% rate of HIV screening in people with unknown HIV serological status. This figure is similar to the one observed in daily practice in primary care settings.

The high rate of positive tests (0.9%) obtained with RDTs for almost half of them suggests their effectiveness in identifying HIV-infected people in areas with a high prevalence of the infection. Further studies are required to accurately assess the impact of the use of RDTs in primary care daily practice, as well as their medical and economic performance.

Contributions of authors

All authors gathered every two months for a round table meeting at the Internal Medicine Unit of Saint Louis Hospital (Paris) to organize, analyze and interpret the study results. Each author contributed to writing the article and to performing all tasks, but the most significant contributions were made by the following authors: design of the protocol: J.P. Aubert, Stéphane Bouée, J.M. Livrozet, J. M. Peter, A. Wajsbrot, O. Taulera, F. Prévoteau; result analysis: D. Papadima, R. Gauthier, S. Bouée; result interpretation: D. Papadima, R. Gauthier, S. Bouée, J.P. Aubert, Stéphane Bouée, J.M. Livrozet, J. M. Peter, F. Prévoteau, G. Conort; writing of the article: D. Papadima, R. Gauthier, S. Bouée, F. Prévoteau, G. Conort.

Disclosure of interest

The authors declare that they have no competing interest.

Acknowledgement

We would like to thank our treasurer Dr J.M. Livrozet for his support and all investigators who participated in the study: Dr Catrice M.–Paris Nord, Dr Taulera O.– Paris Nord, Dr Golfier J.B. – Paris Nord, Dr Gauffier N. – Paris Nord, Dr Kokougan C. – Paris Nord, Dr Di Pumpo A. – Paris Nord, Dr Provost A.G.–Paris Nord, Dr Salaun A. – Paris Nord, Dr Lhuillier L. – Paris Nord, Dr Seif A. – Ares 92, Dr Bacle F. – Ares 92, Dr Nougairede M. – Ares 92, Dr Cordonnier – Ares 92, Dr Mourier – Ares 92, Dr Pillon N. – Ares 92, Dr Lalande M. – Ares 92, Dr Leymarie – Val-de-Seine, Dr Melchior Y. – Val-de-Seine, Dr Majerholc C. – Val-de-Seine, Dr Catusse – Val-de-Seine, Dr Philibert – Marseille, Dr Simon Cohen A. – Marseille, Dr Cadart – Avignon, Dr Wajsbrot A. – Avignon, Dr Regard P.– Avignon, Dr Zanutini C. – Avignon, Dr Goudilliere B. – Toulouse, Dr Haag H. – Toulouse, Dr Pinar M. – Toulouse, Dr Chauveau M. – Toulouse, Dr Palaz Nafnef M. – Toulouse, Dr Adam M. – Toulouse, Dr Pariente K. – Toulouse, Dr Prévoteau du Clary F. – Toulouse, Dr Wieser – Mulhouse, Dr Pellissier – Mulhouse, Dr Willemain I. – Mulhouse, Dr Leveque – Mulhouse, Dr Plaum – Mulhouse, Dr Naessens M. – Lyon, Dr Gueripel V. – Lyon, Dr Godinot – Lyon, Dr Chiarello – Lyon.

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