The Cidex® incident

The use of an inactive batch of Cidex® in Belgian hospitals

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The Problem

- Errors at production of 1st lot of Cidex® of 2000 at Johnson & Johnson Medical UK :
  ⇨ insufficient concentration glutaraldehyde

- 3360 5-liter jugs delivered to
  - 60 Belgian hospitals (84 sites) + distributors / pharmacies (→ private practices)
  - 25 Dutch hospitals

Detection & Measures (1)

- Problem detected in hospitals, not at manufacturers !
- J&J informes its “clients” (hosp. + distributors):
  - 4 April 2000: *head of pharmacy*
    - *Uncertainty about concentration GLA in lot 0001*
    - *Stop use, place in quarantaine*
  - 21 April 2000: *head of pharmacy & purchase, med. direction*
    - *Concentration GLA lot 0001 : 0 à 2.2%*
    - *Recommended to analyse potential health risk of patients exposed to instruments treated with Cidex® 0001*

Measures (2)

- Gen. Pharmaceutical Inspection :
  - Control of withdrawal from market of lot 0001
  - Specimen sampling and examination by independent labs
  - 4 May 2000: Questionnaire to hospitals:
    - Used Cidex® lot 0001?
    - Report immediately all potentially related infections
- Early May 2000: Cidex® in the media

  “Endoscopic procedure maybe infectious”

Measures (3)

- Minister asks urgent advice Sup. Health Council
  - Special working group “Cidex”
  - Advice 10 May (confirmed 8 June 2000) :

➡ Importance of risk for exposed patients ?

Screening cohort of 50.000 patients:

- max. 5 - 11 infections with HBV
- max. 1 - 2 infections with HCV
- < 0.1 infections with HIV

➡ Which tests should be done ?

- HBsAg, anti-HBc, anti-HCV
- baseline + 6 months later
- bloodsamples to be frozen (complement. analysis)

Measures (4)

- Advice Sup. Health Council (contd.):
  - Tuberculosis :

    If bronchoscopy in a patient with Tuberculosis and scope disinfected with Cidex® lot 0001:

    All patients who had bronchoscopy same day: should be invited actively for screening for Tuberculosis
  - Task IPH :

    Epidemiologic investigation of possible consequences of the incident

Epidemiologic investigation

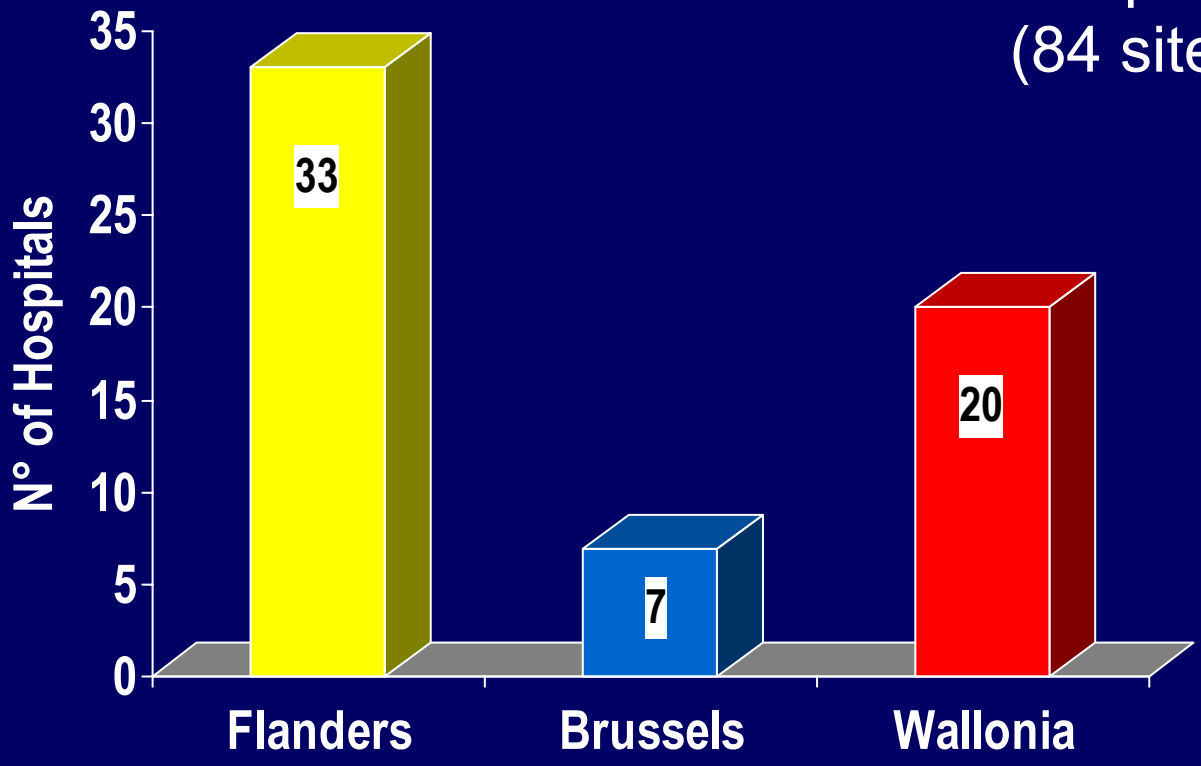
❶ Questionnaire to hospitals concerned :

- ★ Use of Cidex® lot 0001
- ★ Number of patients concerned
- ★ Response 1st invitation for bloodsampling
- ★ Infections possibly related ?
- ★ Interventions in TB-patients?

❷ Collection and analysis of results
HBV & HCV screening

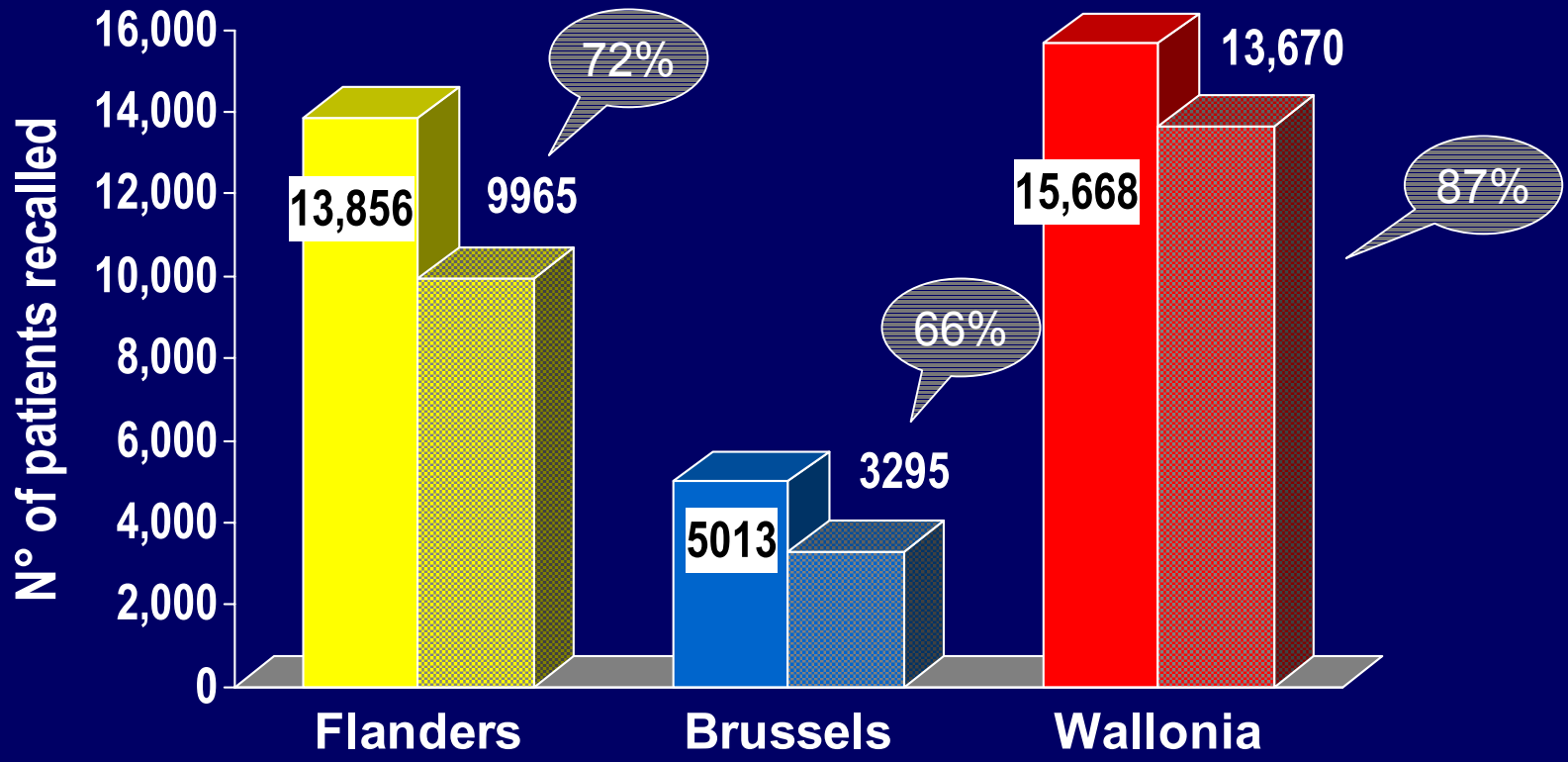
Hospitals having used Cidex® lot 0001, by region

Total: 60 hospitals
(84 sites)

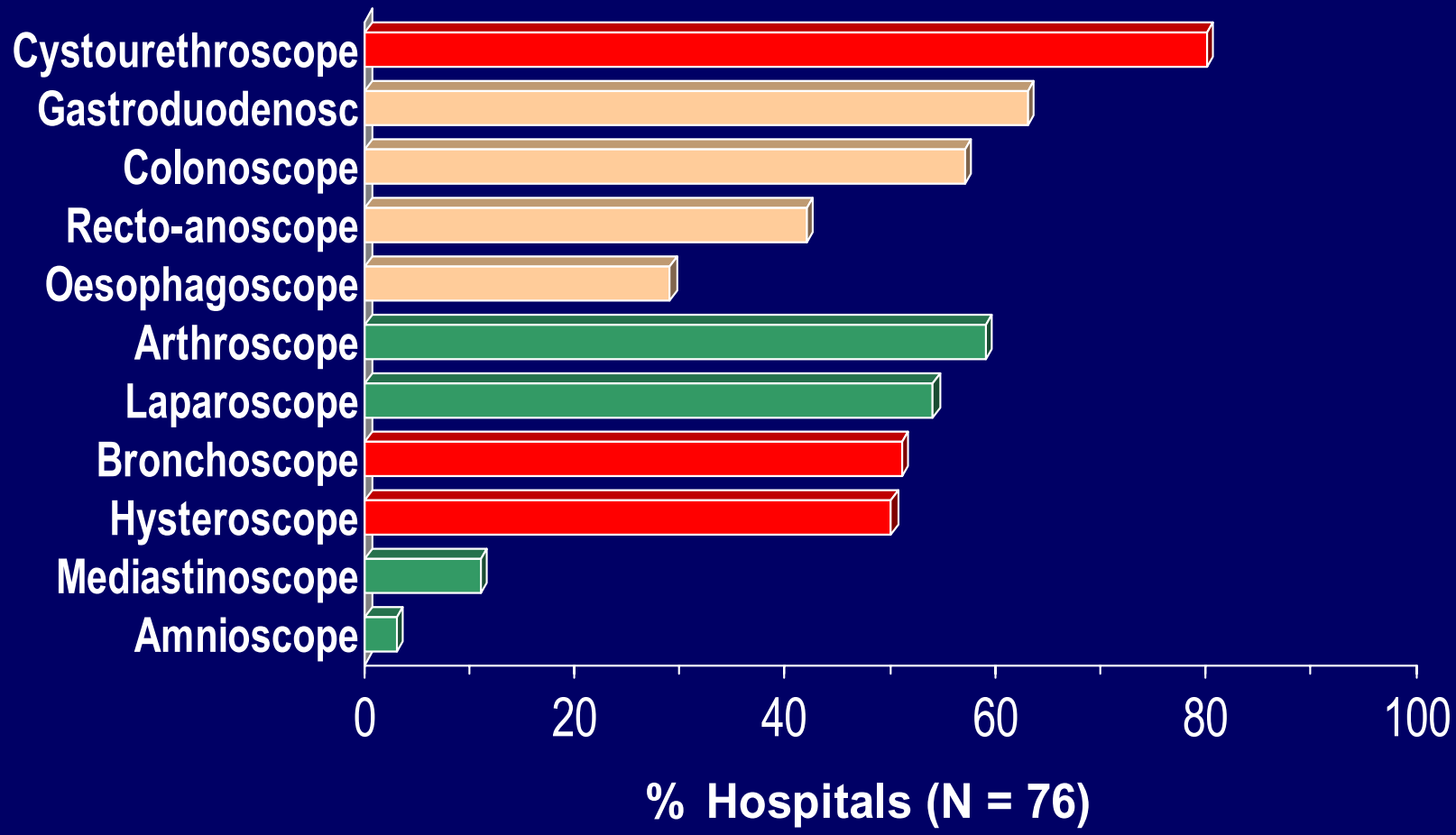


Number of patients concerned and response to 1st invitation for blood test, by region

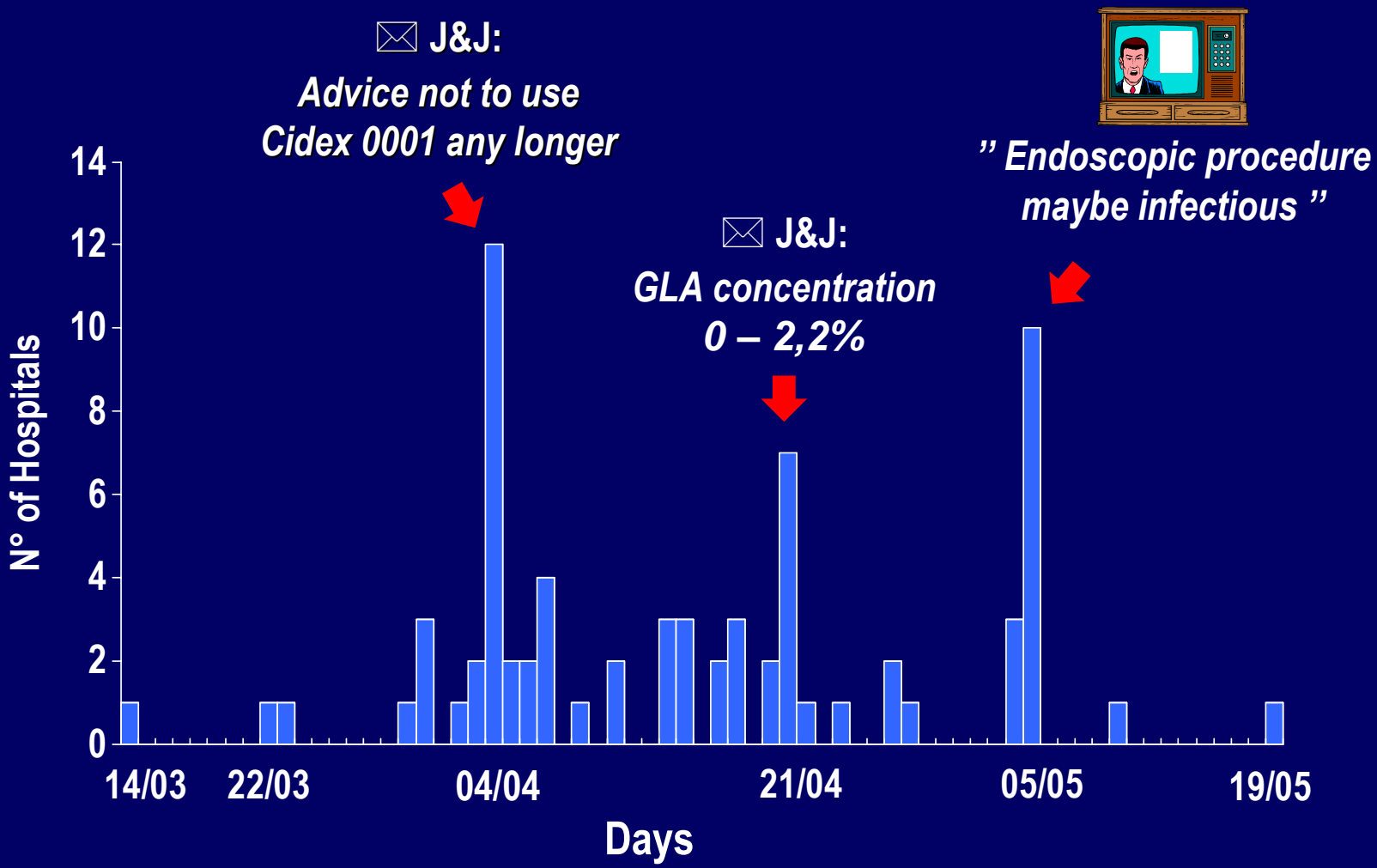
Total: 34.537 patients invited
26.930 pat. (78%) ≥ 1 blood test



Type of instruments disinfected with Cidex®



Stop use Cidex® lot 0001



Bacterial infections possibly related to inactivity Cidex®

- 8 bacterial infections reported (3 hosp) :
  - Breast implant (3)
  - Infectious arthritis of knee post arthroscopy (2)
  - Salpingitis post laparoscopic tubal ligation
  - Endometritis post curettage
  - Cystitis post cystoscopy
- Tuberculosis:
  - 7 hosp : intervention in 1 or 2 TB-patients
  - Bronchoscopies, 1 pleuroscopy
  - No TB-infections in pat. treated with same instrument

❷ Screening for infections with HBV & HCV

- Objectives investigation:
  - Identify potentially recent infections
  - Identify clusters of infections
  - Determine seroprevalence of infections with HBV & HCV in exposed population and compare with prevalence in general population

Results screening for HBV & HCV: Availability of patient data

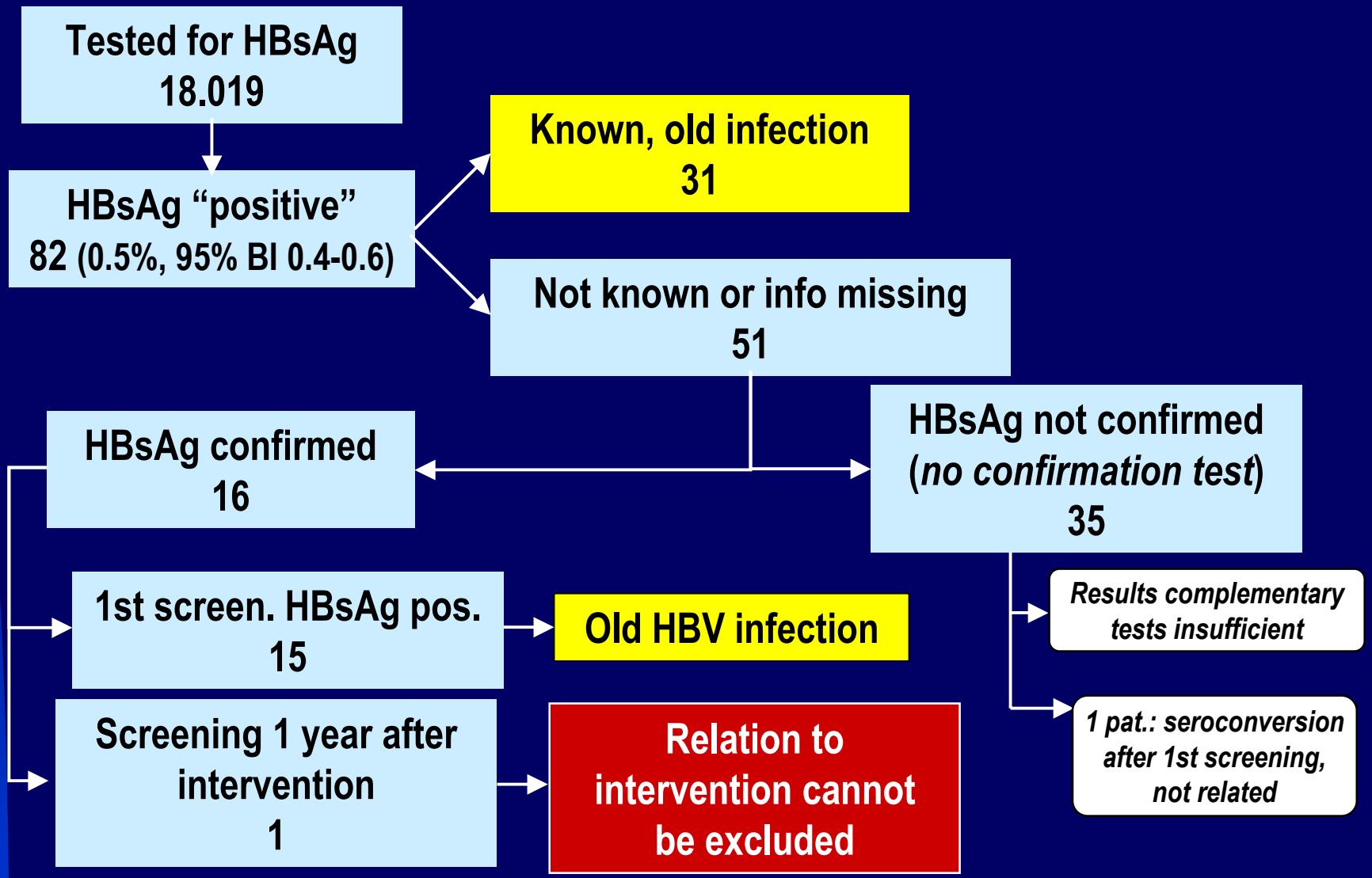
Availability / Quality data	N° hosp	N° pat	%
■ Data file OK	47 (+1*)	24.832	71
■ Summary report	6 (+1*)	4484	13
■ Data file large n° missing data and/or errors	6	5467	16
■ No patient data available *(no patients pos. for HBV of HCV)*	1	87	0,3
Total	60 (+2*)	34.870	

*** Private user of Cidex® lot 0001 (spec. gastroenterology)**

Description Risk Population
(data for 47 hospitals + 1 private user)

- Total n° of patients: 24.832
  - Age: 0 – 97 years mean. **53 years** (SD 20)
    1/**3** ≥ **65 years**
  - Gender: 52 % female
  - Nationality: 98 % Belgian (43 % unknown)
- At least one blood sample: 19.548 (79%)
- Excluded from analysis:
  - Date of intervention before 11/02/2000 (date delivery lot 0001 in Belgium)
  - No results for 3 screening tests
  - ➢ HBV & HCV results: 18.026 patients

Results serology Hepatitis B (HBsAg)

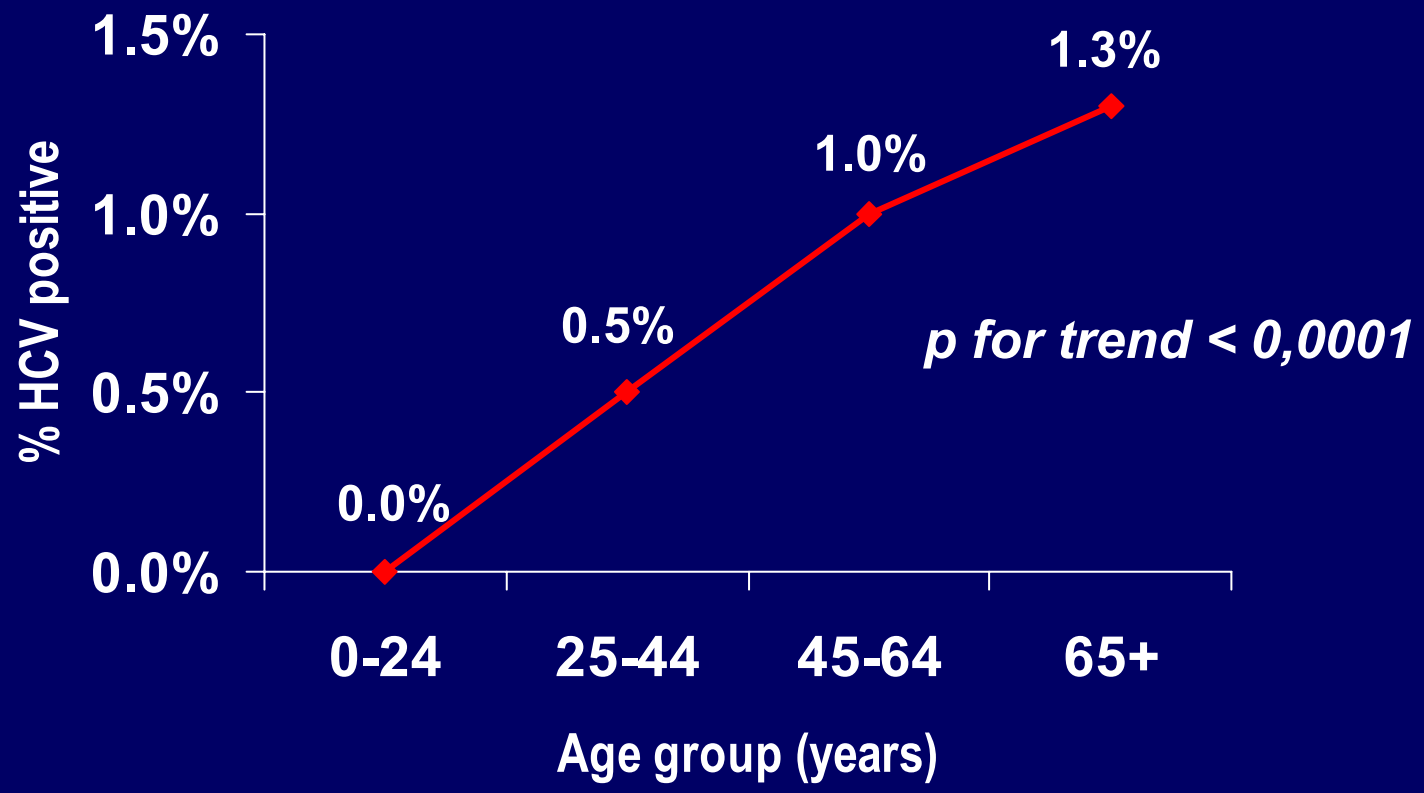


Prevalence of HBV & HCV in exposed patients and comparison with prevalence in the general population (1993 – 94*)

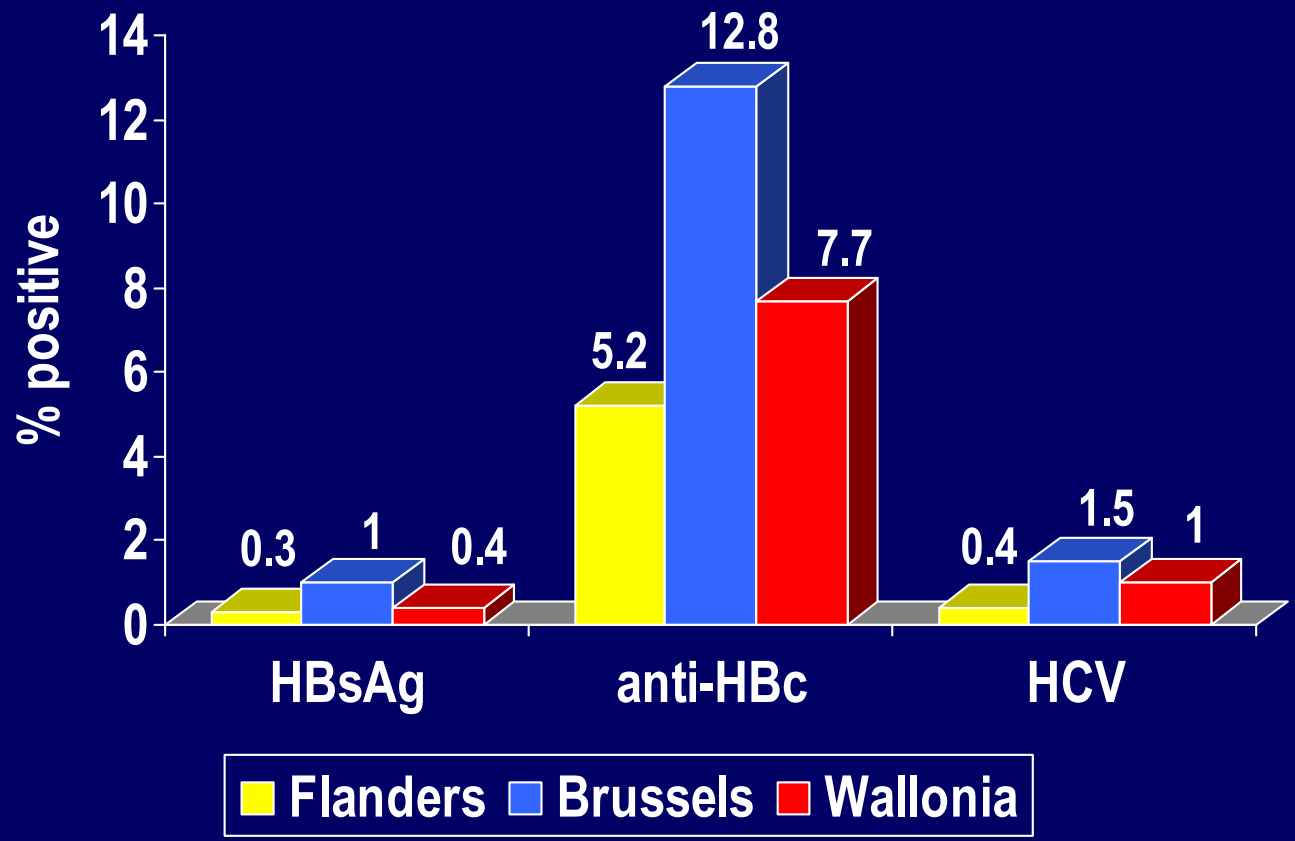
	General population* (Flanders)			'Cidex' patients			
	Tested	Positive		Tested	Positive		
Test	N	%	95% CI	N	%	adj.%†	95% CI
HBsAg	3866	0.7	0.5-1.0	18.019	0.5	0.5	0.4-0.7
Anti-HBc	3866	6.4	5.7-7.3	18.026	7.5	5.6	5.3-6.0
Anti-HCV	4055	0.9	0.5-1.1	18.026	1.3‡	1.1	0.9-1.3
				17.918	0.8§	0.6	0.4-0.9

*** Beutels, Van Damme, Aelvoet et al. Eur J Epidemiol 1997;13:275-280**
† Age adjusted prevalence (standard=Flemish population)
‡ Includes all anti-HCV screening positive results, also without confirmation test
§ Includes only confirmed HCV results

Prevalence of HCV infection in exposed patients, by Age group



Prevalence of HBV & HCV markers in exposed patients, by region



Expert committee Cidex

- Arrangement for compensation of damages by J&J ?
- Collective or individual ?
- Evaluation of individual patient records (infection only) by independent experts
- Task: investigation of possibility of relation between infection and Cidex-problem

Conclusions (1)

- Number of bacterial infections following endoscopic procedure might be related to inadequately disinfected instruments
- No transmission of tuberculosis
- No acute clinical hepatitis B or C
- Prevalence of HBV & HCV-infections not higher than in the general population
- Transmission of infection during medical procedure in some patients positive for HBV or HCV cannot be excluded, neither confirmed

Conclusions (2)

- HBV & HCV prevalences higher in Brussels region (allochtone population ?…..)
- Screening of large number of patients : benefits
  - "Detection" of important number unknown infections
    - follow-up infection status patient
    - timely treatment : progression to chronicity ↓
    - infection status contact persons? (+ vaccination HBV)
  - Attention to Hepatitis C (professionals + public):
    - major public health importance (1% preval, high rate of chronicity → liver cirrhosis, hepatocell carcinoma…)

Conclusions (3) and Recommendations

Quality surveillance :

- Communication !

  J&J, PH authorities, intra-hospital (pharmacy – direction – end users), patients …

- Adherence to protocols regarding procedures for disinfection & sterilisation

  Check activity of products routinely, as recommended by hosp. protocol & manufacturer

Recommendations (2)

- In case of problem with product / instrument :
  - ➢ Identification of patients concerned necessary

  Establish register (for endoscopic procedures) :
  - date procedure
  - name + hospitalisationnr patient
  - type procedure
  - type / serial number instrument

Useful References

* Brochure CSH: L'entretien du matériel endoscopique et la prévention des infections, March 1996

  website: www.health.fgov.be/CSH.HGR

* APIC guideline for infection prevention and control in flexible endoscopy. AJIC 2000; 28:138-55