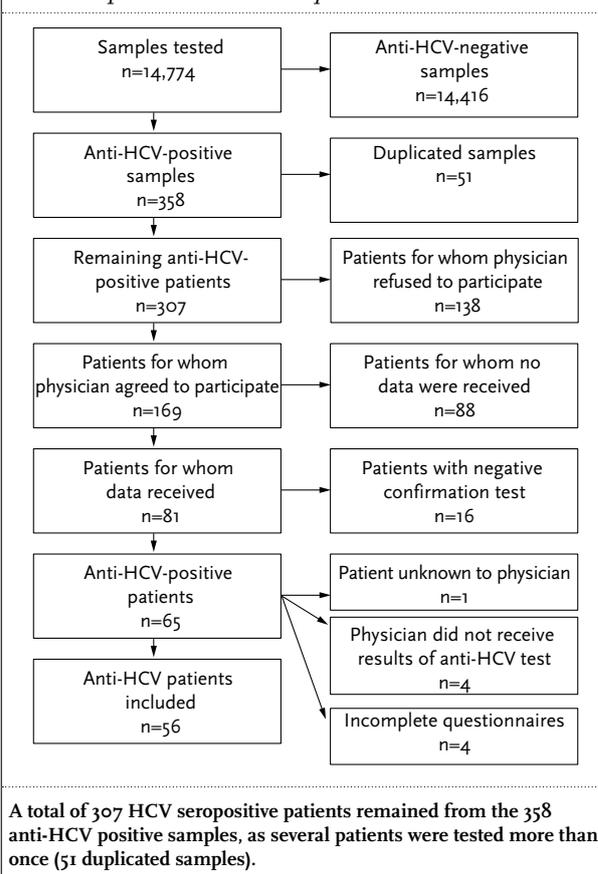


Referral of hepatitis C virus seropositive patients in primary care in the Netherlands

Worldwide there are approximately 170 million people with a chronic hepatitis C virus (HCV) infection. In the Netherlands the assessed prevalence in the population is between 0.1 and 0.4%.¹ HCV-seropositive patients should be referred via primary care to a specialist with experience in chronic HCV infection for medical assessment. Referral has become even more important since the introduction of more effective treatment with pegylated interferon and ribavirin.² The May 2000 Practice Guideline 'Viral hepatitis and other liver diseases' of the Dutch College of General Practitioners, which is regarded as the national guideline for general practitioners, advises that seropositive patients are referred to a specialist.³ Because of a lack of current data for the Dutch situation we conducted a study on the referral of patients testing positive for HCV in primary care. This study was performed for patients testing anti-HCV positive in the years 2003-2006 by a servicing laboratory, the SHL, a Regional Centre for Diagnostic Support for Primary Care (Etten-Leur, the Netherlands). The SHL serves general practitioners and several institutions including centres for the care and treatment of drug addicts in the province of North Brabant. For each patient who tested positive a questionnaire was sent to the physician who requested the test and had agreed to participate. A positive HCV serology was found in 358 of a total of 14,774 samples tested (2.4%). A total of 81 (26.4% of the total anti-HCV positive patients) questionnaires were returned. Fifty-six questionnaires could be evaluated (figure 1). The majority of patients were male (69.9%) and the mean age was 46.4 ± 9.5 (SD) years. The majority of patients originated from the Netherlands ($n=47$), while nine originated from six other countries. The main reason for requesting the test was intravenous drug use in the past or present (51.8%). Possible HCV symptoms (general malaise, fatigue, reduced appetite and fever) in 10.7% and elevated liver enzymes (5.4%) were also reasons for requesting an anti-HCV test. Sexual history was the reason for testing in five cases (8.9%) and a prior blood product transfusion was the reason for performing serology in only one case. For 11 of the patients (19.6%) there were multiple reasons to test, often the combination of sexual history and drug use. The most probable source of transmission of HCV was intravenous drug use in most of the cases (62.5%). Although only risky sexual behaviour in men

Figure 1. Flowchart of anti-hepatitis C virus (HCV) tests and patients in the study



who have sex with men and are HIV infected may form a possible risk for transmission of HCV, the patient's sexual history was reported as the probable route of transmission for six patients (10.7%), three of whom were men having sex with men.⁴ Two patients originated from an area where HCV is endemic. One patient was probably infected by a blood transfusion and another one by treatment for haemophilia, both prior to 1992. For several other patients the route of infection was unknown ($n=6$) or multiple transmission routes were possible ($n=5$). Only half of the patients (28/56) were referred to secondary care. Most patients were referred to a gastroenterologist (61.0%), a minority to an internist (32.0%) and a few patients to a

specialist in infectious diseases. For almost half of the patients who were not referred (48.1%), the reason for not referring is unclear (table 1). A considerable number of patients were not referred to a specialist because treatment was not necessary according to the primary care physician (6/27), mainly because the liver enzymes in these patients were not or only slightly elevated (4/6). However, these patients may nevertheless have had significant chronic liver damage and should therefore have been referred.⁵

Table 1. Reason why patients (27) were not referred to a medical specialist (data for one of the 28 patients are missing)

Reason for patients not being referred	Patients (n)
Physician considered referral unnecessary	6 (22.2%)
Patient refusal	3 (11.1%)
Lost to follow-up before referral possible	3 (11.1%)
HCV-PCR negative	1 (3.7%)
Physician unaware of diagnosis	1 (3.7%)
Other, no specific reason supplied	13 (48.1%)

Three patients did not want to be referred. An HCV-PCR was performed for one patient, which indicated a resolved hepatitis. Half of the patients referred to a specialist were treated (14/28). In the Netherlands a retrospective study was performed before the introduction of effective treatment and largely before the publication of the Practice Guideline. This study was conducted to investigate the referral of patients who tested positive for HCV by a servicing laboratory for primary care in 1998-2000.⁶ Of the 73 positive patients tested for primary care, 28 (38%) were tested for general practitioners, the others for the Community Health Service, care and treatment centres for drug addicts or prisons. Of the 59 patients for whom it was known whether they had been referred or not, only 23 (39%) had been referred to a specialist for medical assessment. Of the 49 patients for whom the complete follow-up was known, only 6% (n=3) had been treated. For 21 of the 46 untreated patients, the general practitioner was of the belief that treatment was not necessary, while for 11 patients the specialist was of the same opinion. Five patients were not treated because of their physical condition and nine patients refused treatment. One might expect the referral rate to have increased after the publication of the Practice Guideline for general practitioners and the introduction of more effective treatment. In our study with patients who were diagnosed as HCV positive after the Practice Guideline had been issued, the referral rate was still only 50%. Although this may indicate an increase in the referral rate, nevertheless, not all HCV-positive patients in primary care are referred to a specialist as advised in the Practice Guideline. If we assume that

participating physicians were not more or less inclined to refer their patients, this study gives a clear indication of current referral practice with respect to seropositive HCV patients in Dutch primary care. However, if we suppose that physicians who refused to participate in this study are less likely to refer their patients, the percentage of patients who were referred will be even smaller than the results presented in this study. The possibility and necessity to treat should be evaluated by a specialist with experience in the management of HCV. Even if treatment is not initiated, the follow-up of patients with chronic HCV infection should be carried out by an expert in this field. This means that every patient with positive HCV serology should be referred to a specialist. The finding that 50% (14/28) of the patients who had been referred were treated illustrates the importance of referral. This study indicates that the advice in the Practice Guideline is still not being completely followed and more attention has to be given to making it more widely known to improve the referral practice of anti-HCV positive patients by primary care physicians, such as general practitioners.

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