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Recommendations for the Classification of HIV Associated Neuromanifestations in the German DRG System

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Abstract: HIV associated neuromanifestations are of growing importance in the in-patient treatment of HIV infected patients. In Germany, all in-patients have to be coded according to the ICD-10 classification and the German DRG-system. We present recommendations how to code the different primary and secondary neuromanifestations of HIV infection. These recommendations are based on the commentary of the German DRG procedures and are aimed to establish uniform coding of neuromanifestations..

Key words: HIV infection; neuromanifestation; DRG system; ICD-10 classification

Introduction

Neuromanifestations of HIV infection are a small subgroup of all neurological disorders. However, among the complications and secondary manifestations of HIV infection, neurological disorders are of growing importance with an increasing incidence and a high utilisation of health care ressources. In addition, neuromanifestations are meanwhile, at least in some cases, treatable and require an in-patient management. Therefore, it is necessary to give exact recommendations for the introduction of HIV associated neuromanifestations into the German DRG system in order to define a uniform and adequate placement of these disorders.

These recommendations are restricted to the primary and secondary neuromanifestations and are not aimed to define recommendations for the HIV infection per se or for internal medicine manifestations. However, these recommendations can be translated also into other fields of medicine. The paper was developed by a collaboration of the Department of Neurology at the University of Münster, the DRG-Research-Group at the University of Münster, the German Neuro-AIDS Society (DNAA), and the German AIDS Society (DAIG). It was approved by the German Neurological Society (DGN). A more detailed version has been published in the official journal of the DGN.

The recommendations are based on the German Coding Standards (Deutsche Kodierrichtlinien - DKR), in particular on the specific recommendations for coding HIV related disorders (DKR 0101d) which are, in some respect, different from the general recommendations for coding.

It is important to code as the principal diagnosis the disorder which was the main reason for in-patient admission. This means that a patient who was admitted for diagnosis or treatment of neuromanifestations must be coded with respect to these manifestations and not with respect to the HIV infection itself. The only exceptions of this rule are primary-secondary code combinations like the so-called 'Kreuz-Stern-Diagnosen' of the German ICD-10-GM. In these cases, the HIV infection type must be coded as the principal diagnosis, and the neuromanifestations must be related to this diagnosis as a secondary disorder.

Codes of Primary Neuromanifestations

HIV infection as the underlying disease should be coded as the principal diagnosis only in thoses cases where the diagnostic or therapeutic procedures of the infection itself (e.g., HAART) are the main reason for the in-patient status. This will be a rare exception in neurology. If this is the case, the codes B20 to B24 should be chosen for the principal diagnosis. The code B24 (unspecified HIV disease), however, should be avoided at all. The code B23.0 (acute HIV infection syndrome) is very rare and should be used only as a secondary diagnosis. Table 1 presents an overview of the coding of primary neuromanifestations.

The most important primary neuromanifestation in in-patients is HIV associated encephalopathy (AIDS dementia). It should be differentiated between a severe dementia and a mild cognitive disturbance, the latter one sometimes only detectable by diagnostic procedures such as MRI scan or neurophysiological testing. The severe type of HIV associated encephalopathy should be coded as B22† with the code F02.4* as secondary diagnosis (as a so-called 'Kreuz-Stern-Diagnose'). The mild type should be coded with G93.4 as principal diagnosis with B22 as additional diagnosis.

Polyneuropathy is the most common primary neuromanifestation of HIV infection. However, it is of minor importance for in-patients. If a patient is admitted for diagnosis or treatment of distal-symmetric polyneuropathy, the code B22† with G63.0* as secondary diagnosis should be used. In the very infrequent types of HIV associated neuropathy, such as

Table 1. Recommendations for coding the most important primary neuromanifestations of HIV infection.

Indication for in-patient admission		code
Diagnosis/treatment of HIV infection		B20-B22, B23.8
Acute HIV infection syndrome		B23.0
HIV associated encephalopathy	severe	B22† with F02.4* as 'Kreuz/Stern-Diagnose'
	mild	G93.4 with B22 as additional diagnosis
Polyneuropathy	by HIV	B22† with G63.0* as 'Kreuz/Stern-Diagnose'
	by HAART	B22 with G62.0 as additional diagnosis
Vacuolar myelopathy		B23.8† with G99.2* as 'Kreuz/Stern-Diagnose'
Myopathy	by HIV	B23.8† with G73.4* as 'Kreuz/Stern-Diagnose'
	by HAART	B23.8 with G72.0 as additional diagnosis

Table 2. Frequent secondary neuromanifestations of HIV infection with the respective code for the principal diagnosis (to be combined with an additional diagnosis from the group B20 to B24).

	Etiology of neuromanifestation	Principal diagnosis
Malign disorders	Kaposi sarcoma[1]	C46.-
(subdiagnosis B21)	Primary cerebral lymphoma	C82.-/C83.-
Opportunistic infections	PML[2]	A81.2
(additional diagnosis B20)	Toxoplasmosis	B58.- (e.g., G58.2† with G05.2*)
	Cryptococcosis (?)	B45.1 (with G02.1*)
	Cytomegalievirus	B25.8
	Herpes encephalitis	B00.4† with G05.1*
	Cerebral tuberculosis	A17.-† (e.g., with G05.0* or G07)
	Lues[3]	A51.1/A51.2
Vascular disorders	Cerebral infarction	I63.-
(additional diagnosis B22)	Sinus thrombosis (without infarction)	I67.6
	Vasculitis (without infarction)	I67.7

[1]The Kaposi Sarcoma is coded as a malign disorder.
[2]PML = progressive multifocal leukencephalopathy
[3]Must be regarded as a co-infection and not as an opportunistic infection.

AIDP and CIDP, the codes G61.0 (Guillain-Barré-syndrome) and G61.8 (other inflammatory polyneuropathies) should be used as additional diagnoses. If the polyneuropathy is related to the HIV treatment (e.g. to stavudine), the code G62.0 (drug induced polyneuropathy) should be used as additional diagnosis.

The very rare HIV associated myelopathy (called vacuolar myelopathy) should be coded as G99.2* (myelopathy in diseases classified elsewhere) as secondary diagnosis with B23.8† (other defined HIV-associated diseases) as the primary code.

The diagnosis or treatment of primary HIV associated myopathy should be coded as G73.4* (myopathy in infectious and parasitic diseases classified elsewhere) as secondary diagnosis with B23.8† as primary code. The myopathy as a sequela of the antiretroviral treatment (in particular induced by azidothymidine) must be coded as G72.0 for an additional diagnosis with B23.8 as the principal diagnosis.

Codes of Secondary Neuromanifestations

The secondary neuromanifestations, in particular the opportunistic infections of the central nervous system, are usually the main reason for admission of HIV infected patients to neurological clinics. If the diagnosis or the treatment of such a neuromanifestation is the predominant clinical feature, this neuromanifestation should be coded as the principal diagnosis without a 'Kreuz-Stern-Diagnose'. It has to be differentiated be-

tween neoplastic, infectious, vascular, and other secondary neuromanifestations. Table 2 shows the most important secondary neuromanifestations with the respective code of the principal diagnosis. The HIV infection has then to be coded as an additional diagnosis from the group B20 to B24.

To code secondary neuromanifestations, some special advices should be followed. For example, the Kaposi sarcoma is listed in the group of malign neoplasms although it is caused by an infection with the human herpes virus type 8. For vascular neuromanifestations (e.g., ischemic stroke), the stroke itself (ICD category I63) or the underlying vascular pathology (e.g., cerebral vasculitis) should be coded as the principal diagnosis. The HIV infection must then be coded as an additional diagnosis with a code from B20 to B24.

Special Aspects

In some cases, no definite diagnosis of the neuromanifestations in patients with HIV infection is possible. This can be true for entities as unclear hemiparesis or paroxysmal disorders such as generalized epileptic seizures. Then, the syndrome itself (e.g., hemiparesis or hemiplegia as G81.0 or G81.1) should be coded together with the codes G09 (sequelae of inflammatory CNS disease of CNS) and B22 for the HIV infection itself.

It is a general recommendation that comorbidities are only allowed to be coded as a separate additional diagnosis if they lead to an increased utilisation of ressources during the actual in-patient treatment. In contrast to this rule, patients with HIV infection should be coded with all manifestations including internal medicine disorders, even if these diagnoses were not relevant for the actual stay in the hospital. The additional codes can have a direct impact on the PCCL and, thus, on the payment by the health insurance system. Further, for HIV infected patients with cachexia the additional code R64 can be applied, although this is not common for other causes of cachexia in the German DRG system.

The codes Z21 (asymptomatic HIV infection status) and R75 (laboratory evidence of HIV) are not allowed to be coded as the principal diagnosis and are not allowed to be combined with a code from the group B20 to B24. Also, the immune deficiency, which is a direct consequence of HIV infection, should not be coded as a separate symptom.

Perspectives

Since neuromanifestations of HIV infection are of rapidly growing prevalence and are frequently a very complex cause of in-patient admission, the coding of these patients should be correct, complete, and uniform because of the high utilisation of clinical, nursery, and apparative ressources. In future years, the DRG system will demand more precise codes and code systems in order to present an adequate compensation for the in-patient diagnostics and treatment of these patients. Therefore, we would like to stress the importance of a uniform coding within the German DRG system.

It has yet to be clarified how the relatively new phenomenon of immune reconstitution syndrome can be described by ICD-10 diagnoses and how this phenomenon can be represented in the DRG system. In this syndrome, atypical neuromanifestations of the HIV infection can occur which can lead to an increased utilisation of clinical and therapeutic ressources. For example, it can be necessary to start an immunosuppressive therapy during the introduction of antiretroviral treatment which will prolong hospital stay. Furthermore, it is not clarified how the in-patient treatment of HIV infected patients in the final stages of the infection can be coded. These patients often require palliative therapy including intensive pain therapy. Finally, it has to be clarified how some specific and expensive treatment procedures (e.g., intravenous treatment with cidofovir in HIV associated PML as procedure 8-54-) can be coded within the German DRG system.

In summary, it is necessary to develop uniform and adequate recommendations for coding specific (neurological) aspects of HIV infection.

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