Molecular cytogenetic monitoring from CD34+ peripheral blood cells in myelodysplastic syndromes: First results from a prospective multicenter German diagnostic study.

The gold standard of cytogenetic analysis in myelodysplastic syndromes (MDS) is conventional chromosome banding (CCB) analysis of bone marrow (BM) metaphases. Most aberrations can also be detected by fluorescence-in-situ-hybridization (FISH). For this prospective multicenter German diagnostic study (www.clinicaltrials.gov: #NCT01355913) 360 patients, as yet, were followed up to 3 years by sequential FISH analyses of immunomagnetically enriched CD34+ peripheral blood (PB) cells using comprehensive FISH probe panels, resulting in a total number of 19,516 FISH analyses. We demonstrate that CD34+ PB FISH correlates significantly with CCB analysis and represents a feasible method for a reliable non-invasive cytogenetic monitoring from PB.