

LETTER TO THE EDITOR

Incidence of Shwachman–Diamond Syndrome

To the Editor: Shwachman–Diamond syndrome (SDS) (OMIM 260400) is a rare autosomal recessive disease first reported in 1964 [1,2]. Diagnostic criteria have been updated [3] to cope with a highly variable phenotype including abnormalities in exocrine pancreas, bones and bone marrow [4–6], an increased risk for myelodysplastic syndrome and leukemia and almost specific bone marrow chromosome abnormalities [7]. Data concerning the incidence of the disorder, all obtained before the identification of the *SBDS* gene [8], are scanty and outdated.

Kent et al. [9] reported an incidence of 1/200,000; in 1995 a slightly higher estimate, 1/150,000, was suggested by Lozada-Munoz and Del Pilar Aliaga, as cited by Cipolli [10]. Goobie et al. [11] estimated the incidence of SDS as 1/76,563.

The collaboration of the laboratories performing molecular diagnoses of SDS in Italy (A.M., E.N.) allowed us to collect the birth dates for all Italian patients in whom the presence of two mutations in the *SBDS* gene was confirmed. We are well aware that some cases with a clinical diagnosis of SDS may have not been studied by molecular analyses, so that our ascer-

incidence to be provided to Scientific Societies (Pediatrics, Haematology, Gastroenterology) in order to potentially improve ascertainment and molecular confirmation of the disease. In addition, as the request for genetic counselling from family members of index cases is steadily increasing, these data will also provide us with a better estimate of heterozygous incidence in Italy, not derived from literature or from different countries.

Our results are shown in Figure 1 and are based on available data [12,13] on birth-number in Italy excluding immigrants. We considered the last 15 years (1996–2010), in which 504,523 newborns/year are reported and we found a mean of 3.0 cases/year, thus the number of mutation proven SDS cases is 1/168,000. More recent years were not included as the average age at diagnosis of SDS is 17 months [14]. Consequently, the carrier incidence expected in the Italian population is 1/205 and we now use this figure for genetic counselling. We also have on record four SDS cases in whom no mutation was found, they are not included in our calculations, but will help to better understand the biology of SDS.

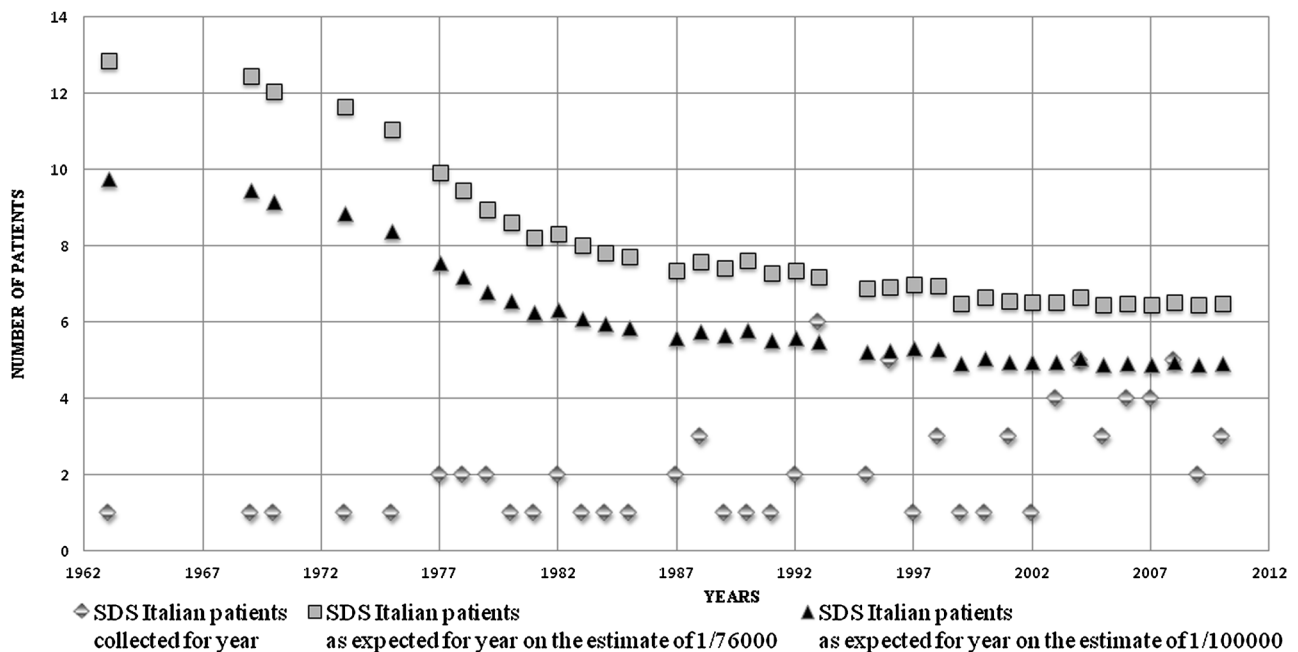


Fig. 1. Scatter graph comparing collected data on number of SDS Italian patients/year versus estimated data.

tainment of these cases is likely not complete; however, we are confident that no molecular diagnoses in addition to those reported have been obtained in Italy. Also, SDS incidence could be underestimated due to the possibility that some cases with very mild presentation may escape the diagnosis. We tabulated the number of patients with two *SBDS* mutations versus the number of births in Italy in order to have an updated estimate of the SDS

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It is relevant to use international registries to obtain similar estimates for all countries, in order to evaluate whether geographical variation in incidence is present and to have better estimates of carrier frequencies for each country to be used for association studies.

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