1.02 Genetics of congenital bleeding disorders (including prenatal diagnosis)

INTEGRATING EXPERTISE: IMPLEMENTATION OF A MULTIDISCIPLINARY PATHWAY FOR GENETIC TESTING AND COUNSELLING IN INHERITED BLEEDING DISORDERS

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Background. the growing availability of genetic testing has expanded its use across many genetic diseases, including inherited bleeding disorders (IBDs), beyond diagnostic confirmation to prenatal, pre-implantation and preconception settings. Patient and family awareness has also increased, leading to greater demand for genetic evaluation. This scenario increasingly requires integration of the expertise of IBDs clinicians and clinical and laboratory geneticists to optimize test indication, interpretation and counselling.

Aims. to describe a multidisciplinary pathway for genetic testing and counselling in IBDs and preliminary results from its implementation in a single center.

Materials and Methods. retrospective descriptive evaluation of the integrated pathway instituted since 2023. The project started with meetings involving medical and nursing staff from the IBDs Unit and the Medical Genetics Unit to identify practical needs, clinical and organizational issues, to define a shared workflow, later formalized as an institutional procedure.

Results. access to genetic testing is provided through dedicated weekly appointments within the Medical Genetics Unit for patients referred by the IBDs Unit clinicians. A shared digital repository was created for document sharing. At first genetic appointment, pedigree reconstruction, informed consent and sample collection are performed. Molecular analyses are centralized to the regional hub reference laboratory. Results are discussed within the multidisciplinary team and returned in a post-test counselling led by a medical geneticist, also enabling identification and referral of at-risk relatives. Dedicated slots are available for specific indications such as preconception counselling. To date, about 85 probands with hemophilia, von Willebrand disease (VWD) or rare bleeding disorders have been managed. Results are so far available for 61. Pathogenic or likely pathogenic variants were identified in 40 cases, allowing diagnostic confirmation or redefinition (e.g. differential diagnosis between VWD and mild hemophilia in 3 cases). In 9 patients no variants were found, while 12 showed variants of unknown significance (VUS), with challenging clinical interpretation. Twenty-six relatives were evaluated: 15 in families with pathogenic variants, for diagnostic confirmation or mainly for potential hemophilia carrier detection, and 11 for segregation studies, together with coagulation assessment, to support VUS interpretation and possible reclassification.

Conclusions. this experience highlights the value of a structured approach to genetic testing and counselling. Close collaboration among specialists improved organization of diagnostic workflow and enhanced integration of expertise, supporting shared clinical and counselling management.