

CLINICAL INTEREST OF SAME-DAY RESULTS ASSAY “HYDRAGEL 5 VON WILLEBRAND MULTIMERS”

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Background

Up to present, home-brew electrophoretic test is the only technique that allows detecting defects in VWF multimers' distribution. It is a time-consuming technique, difficult to standardize and available only in specialized labs. Moreover, time to results is long (>4days), therefore is not adapted to guide immediate therapeutic actions. Sebia has developed a semiautomatic test, easy to implement in labs routine, simple to standardize and that produces same-day results. Here, we present three cases showing the clinical interest of having same day results for a multimers assay.

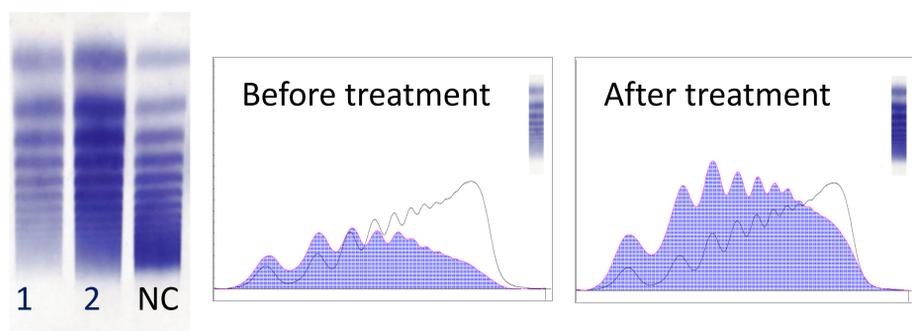
Methods

Citrated plasma samples were analysed on the Hydrasys 2 instrument (Sebia, Lisses France) with a ready to use SDS agarose gel (Hydragel 5 von Willebrand multimers, Sebia). Multimers were visualized directly on the gel (w/o protein transfer) by following manufacturer instructions. Curves were produced using the manufacturer's gel scanner and interpretation software.

Clinical case 1

A woman with a suspected acquired VWD VWF:Ag = 49; VWF:Act = 28 % in basal conditions was treated with a VWF concentrate. After treatment the ratio Act/Ag remained decreased (VWF:Ag = 101 %; VWF:Act = 58 %) The multimers assay evidenced a loss in High Molecular Weight Multimers (HMWM) in both samples, that strengthened the hypothesis of an inhibitor against VWD, because of an accelerated turn-over of HMWM of VWF concentrates.

| Track | vWF:Ag | vWF:Act | ratio Act/Ag |
|-------|--------|---------|--------------|
| 1 | 49 | 28 | 0,57 |
| 2 | 101 | 58 | 0,57 |



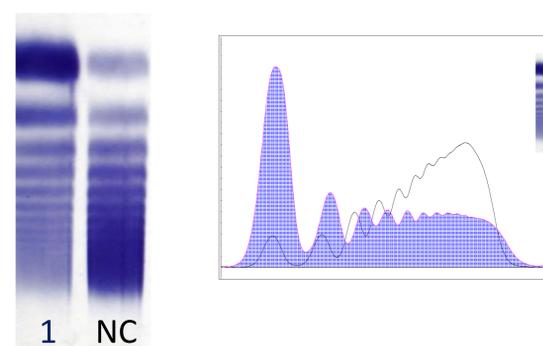
NC: Normal control

Clinical case 2

Analysis of VWF multimers of a pregnant woman with a bleeding tendency and a prolonged bleeding time (PFA >300 sec) and abnormal VWF:Act/Ag.

Multimers assay displayed an excess of unpolymerized VWF, still this patient kept a part of HMWM and no treatment was necessary for the delivery

| Track | vWF:Ag | vWF:Act | ratio Act/Ag |
|-------|--------|---------|--------------|
| 1 | 228 | 68 | 0,30 |

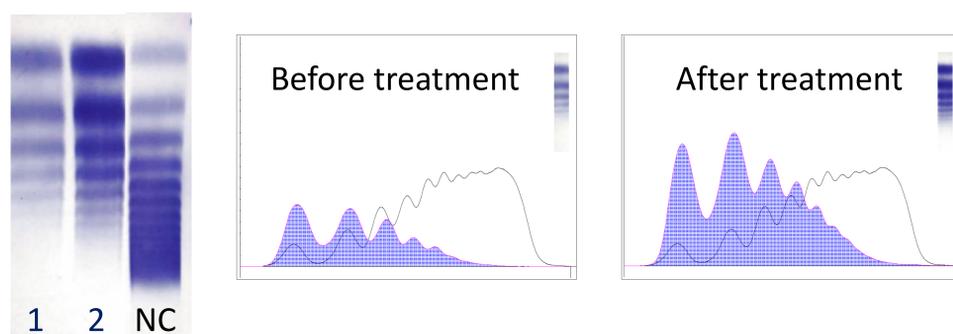


Clinical case 3

Patient with unexplained hemorrhagic syndrome and abnormal ratio Act/Ag (VWF:Ag = 88 %; VWF:Act = 32 %) was treated with desmopressin.

After treatment the Act/Ag ratio increased (VWF:Ag = 131 %; VWF:Act = 77 %), however the multimers analysis detected an absence of HMWM in both samples, confirming the non responsiveness of patient to treatment

| Track | vWF:Ag | vWF:Act | ratio Act/Ag |
|-------|--------|---------|--------------|
| 1 | 88 | 32 | 0,36 |
| 2 | 131 | 77 | 0,59 |



Conclusion

This new assay is a valuable tool for the diagnosis of constitutive or acquired VWD. It provides clear pattern of VWF multimer distribution and has the major advantage to be performed within day. The clinical cases here presented show the importance of multimer analysis in therapeutic decision making. The particular profile of case number 2 is being the object of further studies.