

smart medication™ ITP – a pilot study for investigating the feasibility of online surveillance of patients with Immunthrombocytopenia

W. Mondorf, B. Schmoldt, A. Rösch

Background:

smart medication™ was successfully implemented in haemophilia home treatment. The aim of this investigation was to analyse the feasibility of a modified APP and internet platform for surveillance of patients with immunthrombocytopenia (ITP).

Methods:

The smart medication™ APP and internet platform were modified to document treatment, thrombocyte count and bleeding patterns in patients with ITP. Ten patients were recruited and followed for at least one year, 5 treated with romiplostim, 2 with prednisolone and 3 on a watch and wait schedule.

Results:

The patient APP includes last results of treatment, bleeding and thrombocyte count as well as the possibility for new entries (Fig. 1). Data are transmitted to the ITP centre (Fig. 2) By click to sort, data of interest are quickly shifted above. Patients who agreed for email entry can easily and immediately be contacted. Different treatment patterns are demonstrated: Watch & Wait (Fig 3.), Prednisolon treatment (Fig. 4), Nplate treatment (Fig. 5-7).

FIG. 1 PATIENT ENTRY, TREATMENT, BLEEDING, THROMBOCYTE COUNT

The screenshot shows the app interface with a 'smart medication™ ITP' logo and a list of links: 'What is „ITP“ or „Immunthrombocytopenia“?', 'Where can I find the next ITP treatment centre?', 'ITP-Selbsthilfegruppen', 'Why do I need to document as patient?', and 'Login'. On the right, there are input fields for 'Last Treatment: Date', 'Current treatment: (continue or Change)', 'Last bleeding: Date', 'Current bleeding: Date', 'Reason: spontaneous vs. traumatic', 'Haematoma: none, 1, 2-5, >5', 'Petechia: few, numerous, confluent', 'Nose bleed: once, repeated, continuous', 'Other: Comment:', and 'Foto:'. Below these are fields for 'Last Thrombocytecount: Date and result', 'Date:', 'New Thrombocyte count:', and 'Comment:'.

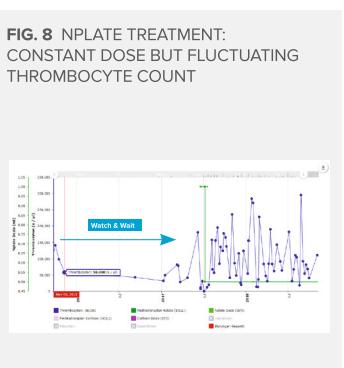
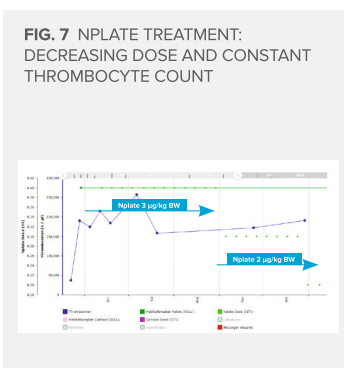
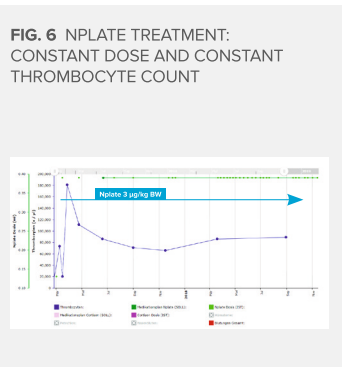
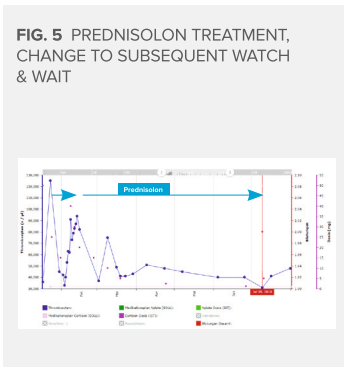
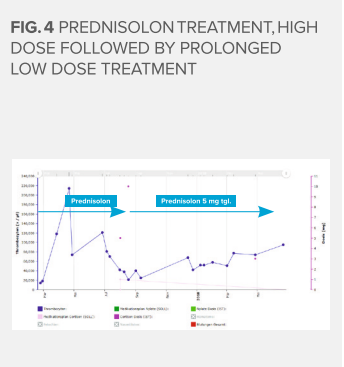
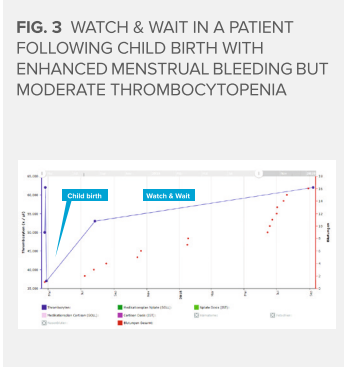
FIG. 2 SUMMARY OF ALL PATIENTS: EMAIL CONTACT, ID, PHOTO, LAST TREATMENT, BLEEDING, THROMBOCYTE COUNT, CURRENT TREATMENT

The screenshot shows the web interface with a 'Patient contact' button and a 'Click to sort' button. Below is a table with the following columns: Kontakt*, Patient, Referenz, Geburtsdag, Letzte Foto, Letzte Behandlung, Blut. letzten 3 Monate, Blut. letzten 7 Tage, Letzte Thrombozyten, Aktion, and Anmerkung. The table lists 10 patients with their respective data.

Kontakt*	Patient	Referenz	Geburtsdag	Letzte Foto	Letzte Behandlung	Blut. letzten 3 Monate	Blut. letzten 7 Tage	Letzte Thrombozyten	Aktion	Anmerkung
✉ email	Patient 1		21.06.2017		21.06.2017	3	0	50.000 / µl (vom 28.09.2017)	-Aktion auswählen -	Nplate
-	Patient 2		20.06.2017		17.07.2017	0	0	25.000 / µl (vom 02.11.2017)	-Aktion auswählen -	Nplate
✉ email / SMS	Patient 3		n.a.		31.08.2017	0	0	71.000 / µl (vom 31.08.2017)	-Aktion auswählen -	Nplate
✉ email	Patient 4		n.a.		14.09.2017	0	0	54.000 / µl (vom 27.10.2017)	-Aktion auswählen -	Nplate
-	Patient 5		n.a.		15.05.2017	0	0	49.000 / µl (vom 17.07.2017)	-Aktion auswählen -	Nplate
✉ email / SMS	Patient 6		n.a.		17.08.2017	0	0	25.000 / µl (vom 11.09.2017)	-Aktion auswählen -	Prednisolon
-	Patient 7		n.a.		n.a.	0	0	114.000 / µl (vom 01.04.2017)	-Aktion auswählen -	Prednisolon
✉ email / SMS	Patient 8		n.a.		n.a.	3	0	53.000 / µl (vom 27.07.2017)	-Aktion auswählen -	Nichts
-	Patient 9		n.a.		n.a.	0	0	n.a.	-Aktion auswählen -	Nichts
-	Patient 10		n.a.		n.a.	0	0	45.000 / µl (vom 24.08.2017)	-Aktion auswählen -	ED mit Steroiden behandelt

*Wichtig!!! Wir können weder sicherstellen noch garantieren, dass der Patient die Nachricht erhält, abrufen und liest

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Conclusion: smart medication™ ITP enables treatment centres to follow up bleeding patterns and thrombocyte counts during watch and wait periods or as a response to treatment. Bleeding pattern, variability of treatment responses and easy analysis of online data, may proof smart medication™ ITP as a valuable tool for ITP centres. In order to improve compliance of documentation, online reminders may need to be implemented.