ABP initialisation, downloading and analysis No:003D

1. Introduction

The ABP monitors need to be initialised for each subject. This process enables all the monitoring criteria, along with individual subject details, to be collectively stored in a computer database. After monitoring, the subject's blood pressure profile is downloaded, using a similar method to initialisation. The blood pressure data can then be retrieved at any time and either analysed using the computer screen or presented in a report format.

2. Responsibilities

Research nurses trained in the method are responsible for initialising and downloading the ABP monitors. It is the responsibility of the physicians involved to analyse the data.

3. Equipment

- ABP monitor, loaded with 4AA previously charged batteries (2 sets)
- Computer loaded with ABP software programme
- Computer interface key

4. Method

Initialisation

- Switch on the computer and enter the ABP report management programme.

- Connect the computer interface key to the INPUT/DATA output port on the base of the monitor. Ensure that the arrow on the interface key and on the ABP monitor are lined up on the same side.

- Switch on the ABP monitor, four 9s should be displayed in the viewfinder.

- With the mouse, click on the communication icon and then click on init monitor.

- Enter the subject's details, unique ID number and MRC GP framework code according to which GP practice the subject belongs. DO NOT alter any of the other settings.

- When completed, click on START INIT monitor. The programme will ask if the monitor is switched on: check and click on OK. If the batteries are too low, the programme will alert you to the fact and you should change them and then continue. The computer screen displays a table indicating the monitor linkage procedure.

- After initialisation, the screen will state that the monitor has been successfully initialised, click on OK. The monitor should now display the correct time in the viewfinder, if not start the initialisation procedure again. If it does disconnect the monitor from the interface key. Install the ABP monitor to the subject using the guidelines laid down in the ABP standard operating procedure. Exit the ABP programme.

Downloading the readings

- Enter the ABP report management programme and connect the monitor as before. Ensure that it is switched on.

- With the mouse, click on the communication icon and click on READ monitor. The programme asks that the monitor is switched on, check and proceed by clicking on OK.

- If no readings have been taken with the monitor, the programme will inform you. To continue, press OK and reinstall the monitor on the subject. This should however, not occur if the correct procedures were followed.

- Follow the programme for downloading. The first instruction asks for a unique 9 digit ID number, enter 9 zeros (this number will never appear again) and click on OK.

- Enter correct group according to MRC GP practice, then press OK. The programme will now instruct you to give all the subject details: enter all the information you know about the subject (this will remain confidential). When completed click on the FILE icon and then click on SAVE (VERY important or all the information will be lost).

- To enter the subject's diary activities, click on REVIEW and then click on RAW DATA TABLES. The subjects blood pressure results will be shown in a table format. Using the mouse, click on the far right hand side of the time and blood pressure reading you wish to put a diary entry into. A white box should appear on the screen, enter the diary activity. If the white box does not appear in the place you wish it to, using the mouse, move the cursor on the screen to the designated space and click on the left hand button until the white box appears in the appropriate space. Enter all relevant diary activities for examples; took medication, stressed at work or relaxing watching TV.

Report generation

- To create a report, or observe the data, click on the FILE icon, click on OPEN, then select the appropriate group and highlight the subject by clicking the mouse over the subject name. Click on OK to continue.

- Click on REVIEW, a list of 7 options is shown. Click on RAW DATA GRAPHS. The screen will reveal the subject's blood pressure profile over the 24 hour period. Average graphs, percentage graphs, raw data tables and statistical summaries provide the same information in a different format generally used during interpretation of the results. Click on CONFIGURATION if any changes need to be added. If editing data, remember to click on SAVE after the alterations have been made.

- Groups of subjects can be retrieved by clicking on FILE and then OPEN. Select the group according to subject, physician or scan group. Click on OK to reveal the group.

- Reports can be printed by clicking on FILE, then clicking on PRINT. The report sequence can be altered by clicking on Setup and selecting Report sequence, this should not need altering, as all reports will be presented in the same format for the study. If the sequence should need altering click in the boxes data which you do not want (data is automatically printed unless directed otherwise) or click in the boxes the order in which you want the report printed. The screen will assign a number to each box in the order with which they are selected.

Other features

- This section provides an overview of the facilities available from the menu bar.

File Menu

This is the main key of the programme, the options include:-

Open
Opens up the main system menu for subject information.

Close
Shuts down the main menu off the screen.

Save
Use this button to record the subject details on the computer database **(work not saved will be lost)**.

Print
Any subject details highlighted can be printed with this feature.

Copy scan
Allows scans to be copied onto discs for backup. To copy scans ensure the scan(s) you want copied is highlighted. In the box which says FROM GROUP, select the subject's MRC GP number and in the TO GROUP ensure it reads ABP drive A, then click on the FILE menu and click on COPY scan. All highlighted scans will appear on the disc. Files which may have been lost due to a computer/handler failure can be retrieved from the disc. This is achieved by selecting the ABP drive A group when using the ABP report management programme.

Delete scan
Highlighted scans can be deleted by choosing this option Ensure all files are backed up on discs, so if a file is deleted by accident, details from it can still be retrieved.

Printer set up
Sends all printed results to designated printer.

The other options are not required for this programme.

Edit Menu

This option allows data to be cut and pasted. However, it is more useful to edit subject details by using the configuration button found under setup (discussed later).

Review Menu

Subject details and blood pressure results are displayed under these headings:-

Patient information
Reveals all subject information & medical history

Raw data tables
Raw data from ABP readings displayed in a table, diary activities can be added or viewed here.

Raw data graphs
Raw data displayed in a graphical format (2 graphs, top graph shows systole, MAP and diastole and the bottom graph displays heart rate).

Average graphs
ABP readings averaged and displayed in a graphical format

Percentage graphs
ABP readings displayed as percentage histograms

Statistical summaries
Summary of statistical periods of ABP readings

Caliper summaries
Not used for this study

Configuration
Use this option to edit information

Tools Menu

Two availabilities here:-

Print review
This option prints subject details, physician details and scan date history. No scan data can be printed from here.

Update
Not used for this study.

Set up Menu

This menu alters all the settings. **These should not be altered. However, some new data settings may need to be added.**

Groups

For a new MRC GP practice a new group name will need to be added, this is achieved by:- Click on NEW, add the number required in the name box. Add the number in the correct position in the work import/export/work directory boxes.

Ensure that the number sits between these settings [C:**Number**\directory].

Click on SAVE, then OK. The name should appear in the scan group and default

group boxes. If it doesn't, repeat the process.

Monitor

This has been pre-set and should read:-

- Daytime 0800 to 2200, readings every 30 minutes
- Nightime 2200 to 0800, readings every hour

The default group should read your centre location e.g London. DO NOT alter the settings, unless they alter from the above data.

Diary entries

Subject diary details can be selected from this menu and added to the subject's report. To add a new entry, click in the diary item box, type in the activity, click on ADD. To check the entry is now in the selection, use the arrow keys. Diary entries are listed alphabetically.

Physician
This should always read The BRIGHT Study (UK Collaborative Study). **DO NOT ALTER.**

Communication
NEVER ALTER THE SETTING HERE, IF ALTERED IT WILL NEED A SPACELAB TECHNICIAN TO COME AND REPROGRAMME THE SYSTEM.

Statistics
This has been pre-set and should read:-

- Daytime Systolic 140 / Diastolic 90
- Nightime Systolic 120 / Diastolic 80

DO NOT alter the settings, unless they differ from the data above.

Report sequence
This option allows the report pages to be rearranged in a different order. These should not need altering. However, to alter the order click in the boxes, alongside the data options. Re-click in the boxes with the order that you wish the report to be generated.

Communication Menu
The options here have already been discussed, they are used for initialising and downloading of the ABP monitor.

- ***Init monitor***
  Initialises the monitor.
- ***Read monitor***
  Reads the subject's blood pressure profile, from the 24 hours of monitoring. It can then be generated into a report.
- ***Read card***

Option not accessible, as no card available.

Window Menu
Rarely used, allows arrangement and positioning of multiple review windows.

Help Menu
This option is available at any time. Two options:-

- **Help for help**
  Offers guidance on the section with which you require assistance.
- **Help index**
  Offers guidance on any aspect of the programme.

5. Additional Information

- The ABP programme has several ICON functions which can be used for the more experienced computer user. These include an initialisation and downloading function and then the usual cut, copy, paste, print, save and next subject icons.

- Additional information regarding the ABP programme can be obtained by referring to the manufacturer's manual.

6. Reference Documents

Spacelabs (1996) 90207/90217 ABP Monitors and ABP Report management system - Operations manuel. Spacelabs medical inc, UK.