

## **Supplemental Methods:**

### Study population and design:

All patients were included after providing written informed consent. The exclusion criteria were inability or unwillingness to provide informed consent and HF worsening requiring hospital admission at entry.

They were informed that they could withdraw from the study at any time. All patients eligible for inclusion gave their consent to participate in the study and none withdraw their consent.

The reference echocardiographic examination was performed by the cardiologist who was randomized to follow-up the nurse who already had carried out an US examination of the patient. The cardiologist was blinded to the result of the examination performed by the nurse and did not perform any history taking or clinical examination.

### History recording and clinical examination to assess volume status

Furthermore, patients were interviewed about medication, potential side effects of the drugs, as well as daily activities. The patients were advised on water and salt restriction, if relevant, as well as informed about the drugs and therapeutic choices.

### Pocket size-ultrasound examination by the nurses to assess volume status

The device weight is 390 g, including the phased-arrayed probe and is a low-cost scanner. The device offers two-dimensional grey scale and colour Doppler imaging, and dimension can be measured online on the device. The bandwidth with range of 1.7-3.8 MHz is automatically adjusted. The length of recordings of other structures is predefined and limited to 2 seconds, if the automatic algorithm does not detect cyclicity (i.e. left ventricular recordings). Patient identification is allowed by voice recording and automatically assessed examination number. All images and recorded loops were saved on the device's micro-SD card and later transferred to a computer by commercial software (Gateway; GE Vingmed Ultrasound).

The IVC was measured distally to the inlet of the hepatic vein in the sagittal plane.

Loops containing the complete respiratory cycle were frozen and the nurses scrolled manually on the PSID to measure the maximal IVC diameter (end-expiratory) and minimum IVC diameter (end-inspiratory (sniff)).

The hemithoraces were assessed with patient in sitting position with respect to pleural effusion. The diaphragm was identified on both sides by using the liver and spleen as landmarks. Pleural effusion located in the costodiaphragmatic angle only, was assessed semi quantitatively and due to the small amount of fluid classified as insignificant. By larger amount of effusion the dimension between the diaphragm and the lung surface was measured in the middle between the transducer and the mediastinum. If the atelectatic lung bulged into the effusion, the extent of the effusion was measured just medially to the protruding edge of the lower lung lobe. The amount of pleural effusion was classified as no pleural effusion when not present, insignificant when present in the costodiaphragmatic recess only, small to moderate amount when the described dimension was  $<3$  cm and significant when the measurement was  $\geq 3$  cm.

#### Validation by high-end echocardiography

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The high feasibility and high reliability of the US examinations by the nurses is comprehensively described in a recent publication.

The reference echocardiography was performed by one of four cardiologists blinded to known clinical and imaging results. A Vivid 7 scanner (GE Vingmed Ultrasound, Horten, Norway) was used. The dimension of the IVC and pleural effusion were measured as described for pocket-size US.

The echocardiographic examination was performed with the patient placed in a left lateral supine position. Ejection fraction (EF) and left ventricular (LV) volumes were calculated based on tracing of the endocardial borders in the 4-chamber and 2-chamber views and the LV dimension was measured in the parasternal long axis motion mode recordings. Mitral inflow indices were measured by pulsed wave Doppler with the sample volume at the

tip of the mitral leaflets. These measurements are incorporated in the basic characteristics only. Based on the echocardiograms and the medical history the cardiologist determined the main cause of the patient's heart failure.

#### Statistical analysis

The kappa and correlation statistics were interpreted as " $<.2$ "; slight agreement, ".21-.4"; fair agreement, ".41-.6"; moderate agreement, ".61-.8"; substantial agreement and " $>.8$ "; almost perfect agreement.

Sample size of  $> 55$  participants was estimated by expecting difference in classification of volume status of 10 percentage points (with an error of 8 percentage point). Power estimates were calculated by Sample Power (version 3; SPSS Inc., Chicago,IL,USA).