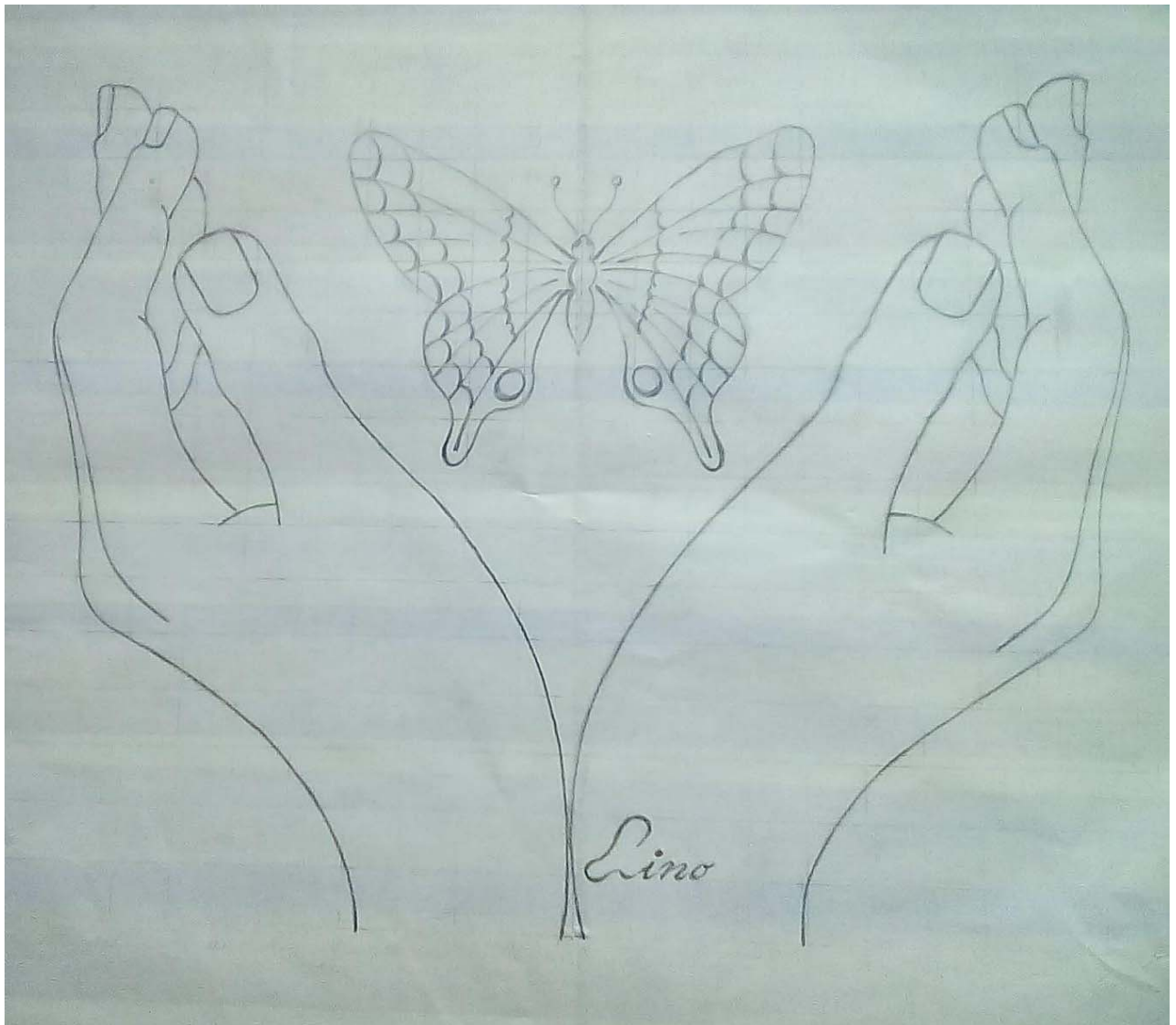


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# **CORRELATION STUDY BETWEEN ECHO-FAST ASSESSMENT IN THE GERIATRIC FIELD (Gecho-FAST) COMPARED TO THE "GOLD STANDARD" ASSESSMENT IN PATIENTS AFFECTED BY COMORBIDITIES: MEDICAL AND INFERMAL ASPECTS.**

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**KEY-WORDS:** Gecho-fast, geriatrics, comorbidities.

## **ABSTRACT**

**Aim:** the purpose of our study is to evaluate the correlation between the Echo fast ultrasound evaluation in the geriatric setting (Gecho-FAST) compared to the re-evaluation using "Gold standard" diagnostics.

**Materials and Methods:** 30 subjects (16 men and 14 women) with an average age of 82 years (minimum age of 68 and maximum age of 87) suffering from comorbidities and bed-rest syndrome were enrolled in our study. All enrolled subjects, over the age of 65, voluntarily agreed to undergo the ultrasound evaluation (Gecho-fast) in conjunction with the geriatric home visit requested for bed-rest syndrome. The patients were evaluated using the ALOKA C3 prosound portable ultrasound system during a home visit. As a control and follow-up, the evaluation with the "Gold standard" comparison method was requested as reported(tab. 1). All patients provided for informed consent to the execution of the ultrasound procedure and the processing of personal data. Following the home ultrasound evaluation and the control using the gold standard technique, the statistical correlation analysis was carried out between the results of the two methods used as bedside diagnosis (Gecho-fast) and as control and follow-up (tab.2 ). Statistical analysis was performed using the Pearson correlation test. **Results:** from the data analysis, a strong correlation emerged between the data relating to the Gecho-fast method and the data relating to the Gold Standard control method relating to the diagnoses of Pneumothorax, Pleural Effusion, Pericardial Effusion, Cholecystopathies and Acute Urine Retention ( Bladder globe). However, a weak correlation emerged

between the data relating the renal lithiasis assessed acutely using home Gecho-fast and the data relating to control with the Gold standard method. **Discussion:** From the data in Table 2 it emerges that the Gecho fast method is absolutely reliable, when comparing the data with the gold standard method, in the diagnosis in the geriatric home setting in patients suffering from comorbidities and bed-rest syndrome. The weak correlation between Gecho fast diagnostics and the gold standard method (specialist outpatient ultrasound control) could be influenced by the negativity response of the post-acute clinical picture in cases of microlithiasis associated with an "expulsive" episode of the calcific aggregate during subsequent urinations or to the difficult localization of the aggregate at subsequent times due to migration of the same or in case of intense consensual intestinal meteorism). **Conclusions:** The study we carried out allowed us to analyze the presence of a strong correlation between Gecho fast home evaluation and control with standard method (Tab.1). The presence of a weak correlation in the case of a diagnosis of nephrolithiasis can be explained by the variability of the size of the stone and the possibility of its migration until complete "expulsion" at the same time as the voiding episode (Table 2). The size of the sample under examination and the average age of the patients enrolled do not allow the results of the study to be extended to the entire population.

#### TABLES

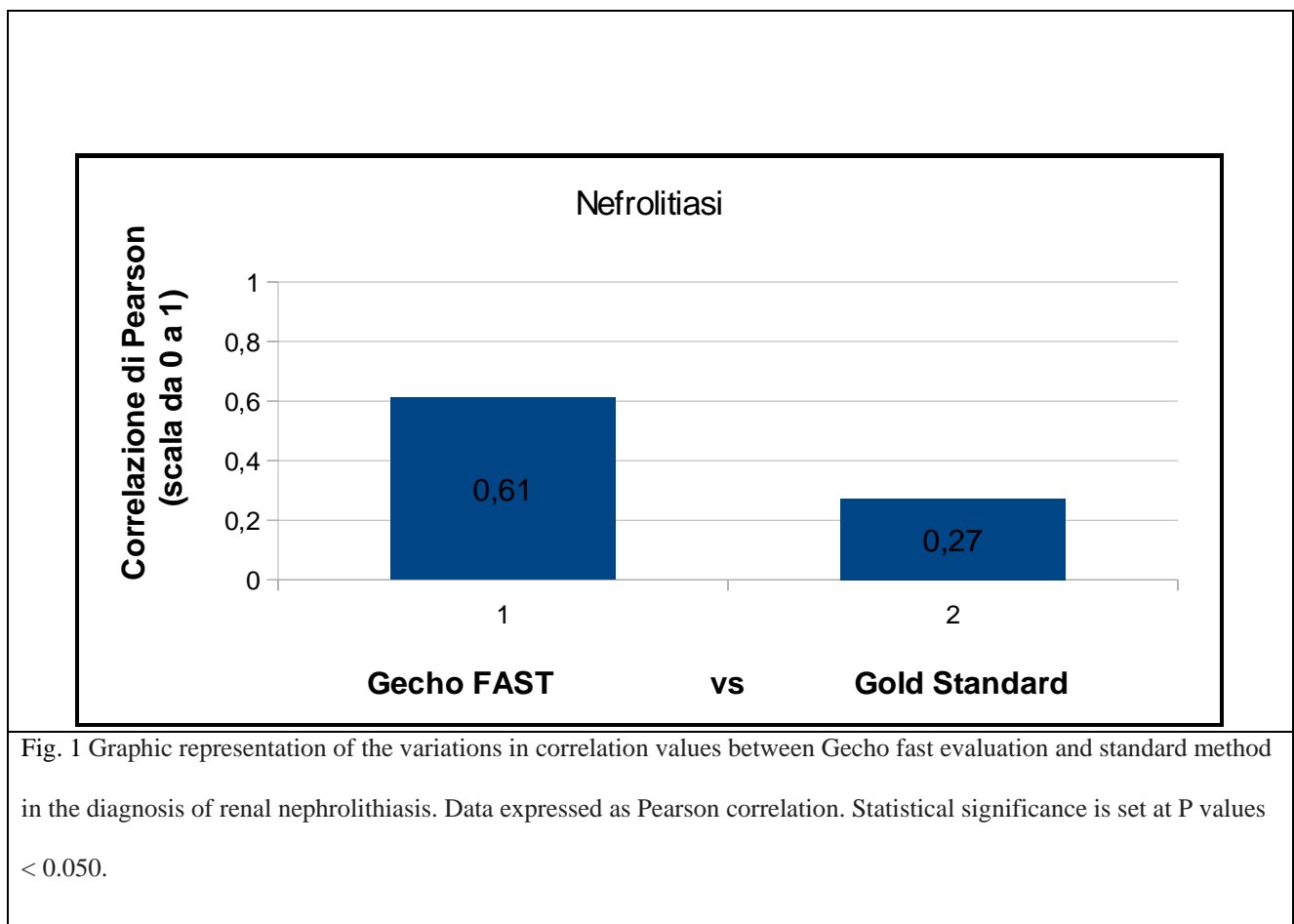
	<b>Metodica in Acuto</b>	<b>Metodica Gold Standard</b>
<b>Pneumotorace (PNX)</b>	<b>Gecho FAST</b>	<b>Rx torace 2 proiezioni</b>
<b>Versamento Pleurico</b>	<b>Gecho FAST</b>	<b>Rx torace 2 proiezioni</b>
<b>Versamento Pericardico</b>	<b>Gecho FAST</b>	<b>Ecocardiogramma</b>
<b>Colecistopatie</b>	<b>Gecho FAST</b>	<b>Ecografia ambulatoriale</b>
<b>Nefrolitiasi</b>	<b>Gecho FAST</b>	<b>Ecografia ambulatoriale</b>
<b>Ritenzione acuta di urine (Globo Vescicale)</b>	<b>Gecho FAST</b>	<b>Ecografia ambulatoriale</b>

Tab. 1 Description of the main diagnoses evaluated using Gecho fast home care compared with the Gold standard method.

	BASE $\pm$ DS	CONTROL $\pm$ DS	Probability (P)
<b>Pneumotorace (PNX)</b>	<b>1</b>	<b>1</b>	<b>P &gt; 0,050</b>
<b>Versamento Pleurico</b>	<b>1</b>	<b>1</b>	<b>P &gt; 0,050</b>
<b>Versamento Pericardico</b>	<b>1</b>	<b>1</b>	<b>P &gt; 0,050</b>
<b>Colecistopatie</b>		<b>1</b>	<b>P &gt; 0,050</b>
<b>Nefrolitiasi</b>	<b>0,612</b>	<b>0,272</b>	<b>P &lt; 0,050*</b>
<b>Ritenzione acuta di urine (Globo Vescicale)</b>	<b>1</b>	<b>1</b>	<b>P &gt; 0,050</b>

Tab. 2 Descriptive analysis of data relating to the Gecho fast study and comparison with the gold standard method. Data are expressed as Pearson correlation ( $-1 < \text{Pearson} < +1$ ) with weak correlation values if  $\text{Pearson} < 0.3$ ; moderate correlation if  $0.3 < \text{Pearson} < 0.7$  and strong correlation if  $\text{Pearson} > 0.7$ . The probability is considered significant only if  $P < 0.050$ .

Figure



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