To understand the geophysical processes associated with L'Aquila (Central Italy) seismic sequence, culminated with the 6 April 2009 M=6.3 earthquake, and to possibly identify some possible precursors, we analysed the Cartesian magnetic field components measured at the Geomagnetic Observatory of L'Aquila in the period 2007-2009 and estimated the horizontal-to-vertical component transfer functions in the frequency domain. The Observatory was less than 10 km far from the main shock epicenter, so any possible magnetic effect related to earthquakes should be easily detected in its magnetic data. However, from the conventional transfer function analysis no clear anomaly was apparent. On the other hand, when we analysed the data in terms of a more unconventional technique, looking at the Transfer Function spectral entropy that precedes the main shock of the sequence, we found the presence of distinct temporal regimes that cannot be simply due to external field contaminations. We speculate that the clear entropy anomalies might be related to the migration of fluids and/or the changes in micro and mesofracturations, which likely affected most of the lithosphere beneath the region of L'Aquila before the occurrence of the main significant shock. Although the found indications are important to understand some of the geophysical processes preceding the main shock, they do not seem, at the present, to have any practical forecasting potential.