**P1037**

**Paper Poster Session V**

**Carbapenem resistance in Klebsiella**

## Treatment of a patient colonized by a *Klebsiella pneumoniae* (ST1519) harbouring the novel KPC-19 carbapenemase and undergoing liver transplantation

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**Objective**: To study *K. pneumoniae* strains harbouring a novel carbapenemase and isolated before and after decolonisation of a patient undergoing liver transplant

**Material and Methods:** In May 2013 *K. pneumoniae* MDR 53 was cultured from a faringeal swab of a patient to be evaluated for liver transplant at the Verona University Hospital . Carbapenemase production was tested by CarbaNP test. Prior to the liver transplant the patient was treated with the following decolonisation regimen: Colimicin 100.000 U plus Gentamycin 1.6 mg in gel, 5ml 4/day; Colistin 1 milion U/5ml 4/day; Gentamycin 20 mg/ml, 4ml 4/day. The strains recovered before and after transplant were compared. MICs were performed by microdilution method and interpreted by the EUCAST criteria. Investigation of genes encoding for carbapenemases (KPC, MBL, OXA-type), was performed by PCR. Strains were typed by multi locus sequence typing (MLST).

**Results:** The paryngeal swab of the patient to be transplanted resulted colonized by a *K. pneumoniae* (MDR 53) with a positive CarbaNP test. The patient followed for 7 days an alleged decolonisation therapy. The following screenings - June 13$^{th}$ and July 11$^{th}$ - proved indeed negative for *K. pneumoniae*. Nevertheless, a week after the transplant the screening revealed again a *K. pneumoniae* (MDR 136), which was confirmed also a month later (MDR 345).
The analysis of the three strains was performed. In all of them, the MICs for meropenem, imipenem and ertapenem were higher than 128 mg/L, the MIC for colistin was 32 mg/L, the MIC for tigecyclin was 2 mg/L, whilst all strains were susceptible to gentamycin with a MIC of 1 mg /L.
All three strains amplified by PCR for a $bla_{KPC}$ gene, that after sequence showed in all cases an N291T substitution when compared to the KPC-3 enzyme endemic in our hospital. This new enzyme was called KPC-19 at http:/www.lahey.org/studies and accession number of GenBank is KJ775801.
The MLST was performed for all three isolates. Their profile was new, and it corresponded to ST1519, and the number was assigned at the http:/www.pasteur.fr/mlst.The new profile differ from ST512, present in our hospital, for the allele rpoB. The ST1519 presents the rpoB 9 instead of 1.
**Conclusions:** The strains isolated before and after liver transplant shared the same new ST1519 and harboured a new enzyme, namely KPC-19. Both differed from the KPC-3 enzyme endemic in our hospital, harboured by the ST512. The “decolonisation” treatment was clearly unable to eradicate the carbapenemase-producing *K. pneumoniae* although it was sufficient to safely perform the transplant procedure.